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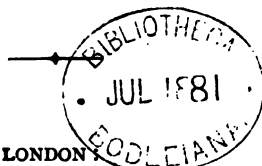
AIDS FOR SICK NURSING.

*A course of Lectures on Home Nursing and Hygiene,
delivered to members of an advanced class of the
St. John Ambulance Association.*

BY

HARRY CROOKSHANK M.R.C.S.,

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TO THE
CENTRAL EXECUTIVE COMMITTEE
OF THE
ST. JOHN AMBULANCE ASSOCIATION,
BY
THE AUTHOR.



ST. JOHN AMBULANCE ASSOCIATION.

UNDER THE PATRONAGE OF

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PREFACE.

THE following lectures were delivered at Kensington in December of last year to a ladies' advanced class of the St. John Ambulance Association, and were printed at the request of its Central Executive Committee, as a text book for the classes on Home Nursing and Hygiene. The number of lectures of which the course consisted and their syllabus, being limited, necessitated brevity in the treatment of the subject and must be my apology for any apparent omissions. I am indebted to Dr. Sieveking and Dr. Lionel Beale for having carefully revised the proof sheets on behalf of the St. John Ambulance Association, and for suggesting many useful additions.

H. CROOKSHANK.

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LECTURE I.

THE SICK ROOM.

Selection, Preparation, and Cleaning.—

When the choice of the sick-room can be made, one should be selected at the very top of the house, particularly in infectious cases, for the farther the patient is removed from the other rooms of the house in ordinary use, the less danger is there of the disease spreading among the other inmates. It should always have a south or west aspect ; and the room, which should be spacious and lofty, airy, and well lighted by the sun, must be provided with windows, opening top and bottom ; and there should be no cracks in the panes of glass, which must be well cleaned, and the bolts and sashes must work easily, without making any noise when opened or shut.

In order to warm and ventilate the room properly a fire is necessary, and before using the room, the chimney, which should have a good draught, must be thoroughly well swept. Always remember to avoid a smoky chimney.

The room will require to be thoroughly scrubbed before use, for which purpose the carpet is removed, and the floor well washed with soap and water, in which a small proportion of carbolic acid (1 part in 200) is dissolved : the walls, skirtings, and doors are then dusted over with a cloth, damped in a solution of carbolic acid and water

of the same strength, the furniture employed being also subjected to the same treatment.

In sweeping out a sick-room, when the patient is in it, avoid sending the dust flying all over the place, by sprinkling the floor with carbolic acid and water, or damp tea-leaves. Linen should never be washed and dried in the sick-room, a very common practice among the poor classes.

Furnishing.—Woollen goods attract dust, and retain bad smells and infection much longer than cotton ones, and should therefore be removed from the room. Hence, in infectious cases, the carpet, window-curtains, heavily-upholstered chairs and sofas, must be taken away.

In private houses, except when nursing infectious cases, the carpet is not generally removed, as it gives a cheerless appearance to the room, and, further, bare boards create more noise. This, however, can be avoided by placing a strip of carpet down the centre of the room, and another by the side of the bed.

All unnecessary articles of furniture must be removed, all that is required being a bed, table, washhand-stand, and a few chairs, which should be plain wooden ones or cane-bottomed. If there are any cupboards in the rooms, they must be emptied and thoroughly scrubbed, and *not* used as receptacles for half-empty medicine bottles, stale food, and a miscellaneous mass of dressings, bandages, splints, and old rags.

It is necessary to be provided with different kinds of vessels for the patient's use, and especially a portable bath. These, however, must not be kept in the sick-room, but only brought in when wanted, and immediately removed after use.

Blinds will be required to moderate the light; but

curtains are better done away with altogether. If, however, they are retained, they should be made of muslin or linen, as they can be easily washed.

Plants are decidedly healthy in a sick-room, as they help to purify the air by removing the carbon and nitrogen from the carbonic acid and ammonia gases given off from the lungs and secretions. Flowers help to brighten up the room, but those giving a heavy, sickly, odour, are to be avoided, as they often greatly depress a patient and cause headache.

In summer, it is well to adopt some plan for catching flies or attracting them from the bed in order to prevent them from annoying the patient ; and in foreign countries, precautions have to be taken, by means of a gauze veil or muslin netting thrown over the bed and face, to protect the patient from mosquitoes and other poisonous insects.

Warming.—The temperature of the room is ascertained by means of an ordinary thermometer suspended above the head of the bed, and not near the fireplace. The thermometer should register from 60° to 65° F., and must be maintained at the same level day and night. In special cases, full instructions are generally given by the medical attendant, as to the required temperature: usually in operation cases and diseases of the chest, the room will have to be kept at 4° or 5° higher than the average, whilst in fevers and cerebral diseases, it has to be lowered to an equal amount.

In tropical climates, and at home in the middle of summer, the difficulty is to cool the sick-room, but this can generally be accomplished by keeping the air in motion with fans and punkahs, opening the windows and sprinkling water from time to time over the window-sills or verandah. A good plan, also, is to place a large piece

of ice on a table in the centre of the room, taking care to have a receptacle under it to receive the water as the ice melts.

In winter, if the air in the sick-room, becomes very dry, it can be moistened by having a kettle, with a long spout to it, always on the fire, or else by hanging in front of the fire a towel wrung out in cold water.

The warmth of a sick-room is maintained by means of a good coal fire, and as the temperature outside the house is generally much lower at night than in the day, the nurse will have to keep up a much larger fire at night-time, especially towards the early hours of the morning.

In replenishing the fire at night, the nurse must be careful not to make any noise with the fuel or fire-irons, so as to awaken the patient: this can be accomplished by having each separate piece of coal wrapped up in a portion of newspaper, so that when required for use it can be taken up bit by bit with the fingers, and very quietly placed on the fire. To stir the fire, it is better to use a stick of wood, than a steel poker; and also adopt some plan of preventing the ashes from falling on the grate, and startling the patient.

Ventilation. — By this is meant a constant, equable, and regular supply of fresh air in the room, in sufficient quantity, without draught, which must be accomplished without any perceptible lowering of the temperature; the air inside the sick-room should be as pure as the air outside the house.

The air we breathe consists of a mixture of two gases, nitrogen and oxygen, in the proportion of 79 vols. of nitrogen and 21 vols. of oxygen in 100 vols. of air, with traces of carbonic acid gas, and more or less watery vapour.

In the natural pure state, the atmosphere contains about four parts of carbonic acid gas in every ten thousand parts of air, but the quantity of this poisonous gas exhaled from the lungs in respiration amounts to 1346 cubic inches, or 636 grains per hour, which, when analysed, is equal to 173 grains of carbon per hour, or eight ounces in twenty-four hours.

We can, therefore, readily understand the absolute necessity of providing a constant supply of fresh air, and the removal of that which is vitiated ; for, if we continue to breathe over and over again the same air that has been expired from the lungs, the proportion of carbonic acid and organic matter will continue to increase, until fatal results are produced ; 10 to 12 per cent. of carbonic acid present in air causing death. Before, however, this point is reached, the poisoned condition of the blood gives rise to a series of symptoms, such as drowsiness, headache, sense of oppression and fainting, which warn us of the unhealthy condition of the air.

In spite of all this continued addition of poisonous matter to the atmosphere outside our dwellings, we find that it invariably maintains its original composition, and this is due to the action of the vegetable kingdom. Plants require carbon for the formation of their tissues, and this they derive from the carbonic acid in the air, which, under the influence of light and heat (the sun), they decompose, absorbing the carbon and liberating the oxygen ; so, too, do they derive nitrogen for their seeds and fruit, from the ammonia (gas composed of nitrogen and hydrogen) in the air, although they would seem to have no power of assimilating the free nitrogen of the atmosphere ; plants, therefore, are valuable adjuncts in purifying the vitiated air of a sick-room.

Bad ventilation, and overcrowding, are fruitful sources of typhus fever. In the Black Hole of Calcutta, of 146 persons, all died but 23 in a very short space of time, and these all suffered from typhus (putrid) fever. In all sleeping apartments each person should have a supply of 1500 cubic feet of fresh air per hour; the quantity present is ascertained by multiplying the height of the room by the length, and then by the breadth.

In sick-rooms and hospitals, ventilation is generally secured by means of open doors and windows, or by special ventilators fixed to the sides of the building; if special ventilators are fitted to the room, care must be taken to see that they act properly, and are not stuffed up with dust or old linen.

The doors and windows should be opposite each other, and the latter left open about 1 inch or $1\frac{1}{2}$ inch at the top, both day and night, except in very cold or windy weather; in foggy weather, the opening can be covered with layers of cotton wool: the door of the sick-room should be *closed*, and the ventilation carried on between the window and the fireplace. The reason for this is, that the vitiated hot air from the lower rooms of the house, especially at night, with lamps and candles burning, being lighter than the air outside the house, rises to the top stories of the building, and fills the sick-room if the door is always persistently open.

The simplest plan of ventilating the room, is to have a strip of wood, the breadth of the window, and about 2 inches deep, nailed on to the bottom of the lower sash, so that it shuts on it, and thus there is a separation of about 2 inches between the upper and lower half of the window *the result is, that the pure air from outside rushes into the room with an upward direction, and then sinking*

through the warmer and lighter strata of air, gradually becomes heated, purifies the room, and is eventually drawn up the chimney, whilst fresh air supplies its place. Sometimes, the upper sash of the window is opened for an inch or two, and a piece of muslin or perforated zinc, nailed across the opening, to prevent the air coming in with a sudden rush.

Other plans, are, by means of perforated bricks fixed in the walls of the room near the ceiling, or circular pieces of glass, with holes in them, fastened to the top window-panes.

The best plan of artificial ventilation is, by means of vertical tubes, which are fixed to the corners of the room. These tubes are about 8 feet in height 8 inches by 3 in breadth, and they communicate with the outside air by means of an opening in the wall, at or near the floor-level ; so that the fresh air, as it enters the room, is caused to take an upward direction towards the ceiling, spreads over the upper part of the room, gets warmed, and gradually descends to make way for fresh supplies, finally passing away up the chimney.

The Bed and Bedding.—If possible, it is a very good plan, especially in medical cases, to have two beds in the sick-room, so that the patient can be removed from one to the other, using one for the night and the other for the day. In changing patients from one bed to another, the second one should first be sufficiently warmed to prevent the patient from being chilled.

The bedstead should be of light iron, with a head-rail to support the pillows, and either a movable foot-rail or none at all. Its dimensions, 6 feet 3 inches in length by 3 feet wide, and about 2 feet from the ground ; if broader than *this*, the nurse will be unable to reach across it easily, and

in attending to the patients will be obliged to resort to the objectionable practice of kneeling on the bed: too high, it makes it more difficult to raise the patient when needed. For children under six, a light iron cot should be provided, with movable sides. Before being used, the framework should be well scrubbed with soap and carbolic water, and a little pure carbolic acid and oil dropped between the joints.

The position of the bed should be such as to enable the nurse to get round on either side, without having to reach across the patient; the head of the bed should be against the wall, and not pushed up in the corner, and the patient must not lie in a direct current of air, but be protected by the judicious use of screens.

The bedding should consist of a good straw or flock mattress, 4 or 5 inches in thickness, with a good horse-hair mattress above it, sheets, blankets, and a counterpane. In the case of fracture of lower limbs, or very heavy patients, fracture-boards, consisting of wood planks the length of the bed, about 8 inches broad and $1\frac{1}{2}$ thick, are placed between the mattresses, to prevent the bed from sinking in the centre (*see Nursing in Fractures p. 24.*)

Feather beds and eider down quilts are to be avoided, as they easily become infected, and cannot be properly disinfected. Hair is by far the best substance to use, as it is readily cleaned, and can be baked in a temperature of 200° , which destroys the germs of infection, but does no harm to the material itself. In public institutions, the hair is removed from time to time from the mattresses, re-curved and cleaned, the coverings being well washed and disinfected, or else destroyed by burning. All mattresses should be the same size as the bedsteads, and their surfaces should be perfectly flat and level.

Regulations for Visitors.—It must depend entirely on the nature of the case and the medical attendant's orders whether visitors should be admitted or not to see the patient. They must certainly be excluded in infectious cases, for although they may have had the disease themselves, and may have no fear of contracting it, yet they may carry away in their clothing the poison germs of infection, and convey it to others.

After seeing visitors, patients generally exhibit more or less signs of excitement, such as increased temperature and flushed face, which should gradually subside; if, however, they are persistent or followed by depression, the visits are only productive of harm, and must not be allowed. Children often have attacks of vomiting or diarrhoea after visiting-day in hospitals, which is generally due to their friends having injudiciously given them fruit or cakes, without the nurse's knowledge.

The nurse must be very careful to prevent the patient from receiving food from friends or relatives, without orders; and on visiting days, in public institutions, it is as well to examine under the pillows, to see that nothing has been secreted there, as cases have been known where patients, recovering from typhoid fever, have suddenly died from perforation of the bowels, caused by eating fruit supplied by visitors.

Visitors should avoid whispering to the nurse or others in the room, as it greatly annoys the patient: if he is too weak to speak, they must avoid asking questions which would demand an exertion on his part to reply. Some patients like being read to by visitors, or hearing general conversation in the room, which should be cheerful and interesting; but avoid talking about the patient's case, in his hearing.

Physician's or Surgeon's Visit. — In *all cases*, the nurse must get ready the following articles preparatory to the surgeon's visit:—lint, bandages, sweet oil or vaseline for his instruments, scissors, tape, pins, needle and thread, hot-water can and strapping, hot and cold water, towels, sponges, cotton wool or tow, macintosh sheeting, porringers to receive old dressings, carbolic acid solution, and spray-producer. Generally in hospitals a dressing case, with a few instruments, and a box containing a dozen gum elastic catheters of various sizes, are kept in some convenient place in the ward. For the Physician's visit, the nurse will have to get ready her chart, with register of patient's temperature, pulse, and respiration; any vomited matter, sputa, or excretions that may be necessary for the doctor to examine; clean towel, basin, hot and cold water, soap, pen, ink, and writing-paper; pins, scissors, a teaspoon, lucifer-matches, and test-tubes.

LECTURE II.

INFECTION AND DISINFECTION.

History of a Fever Case.—After a person has been exposed to the infection of a fever patient, a certain period, called the stage of *incubation*, passes by without any prominent symptoms showing themselves, during which time the poison, apparently quiescent, is working certain changes in the system.

This incubative period varies very much in length of time, according to the special disease contracted, at the end of which, the *period of invasion* commences. The patient complains of chilliness, loss of appetite, feeling out of sorts, weariness and lassitude, a disinclination to exertion of mind and body, and a desire to be constantly sitting in front of a fire, and to be left alone.

Sometimes the fever is ushered in by shivering fits, or a severe attack of vomiting or diarrhœa. As the disease progresses the symptoms increase in severity, and the usual signs of fever are then noticeable—namely, headache, furred tongue, increased rapidity of the pulse and temperature of the body, the skin hot and dry: the patient becomes weaker, and there is complete loss of appetite, and great thirst.

This stage lasts from twenty-four hours to fourteen days, after which time, in the exanthemata, a rash appears, runs through a regular course, and with its subsidence the

symptoms gradually decrease, and the patient passes into a condition of *convalescence*, the whole duration of the illness varying from a few days to a month or six weeks.

In the simple, non-infectious fevers, the prominent symptoms increase up to a certain point, and then gradually subside. In all cases of fever the temperature of the body rises several degrees above the normal, especially at night, and this is accompanied by a condition of delirium, which, in very bad cases, remains persistent during the day.

The natural secretions of the body are interfered with, the skin becoming hot and dry, the urine scanty and high-coloured, the bowels constipated, and the breathing always quickened, and often interrupted by deep sighs ; when these symptoms subside, the patient passes into a state of convalescence.

Infectious and Non-Infectious Cases are so named from the fact that the former are transmitted from one person to another by various channels, never being originated *de novo* ; whilst the latter class are incapable by any means whatever of being transferred to a second person. The poison which, in the *infectious cases*, develops the disease in a second person, can be conveyed through actual contact with the patient's clothes, by means of the skin, which is given off in fine scales, as in scarlet fever and measles, or the secretions from the mouth, throat and nose, and the breath.

When the disease is transmitted by actual contact only it is said to be *contagious*. Some diseases are highly infectious : one single germ, for instance, dissolved in water, will convey typhoid fever. These germs closely *resemble very small seeds of plants*. Water containing *them will develop cholera, typhoid fever, summer diarrhoea*

or dysentery. Contagious diseases are,—erysipelas, hydrophobia, and glanders. Typhus, or putrid fever, is caused by bad smells and overcrowding, distinct from typhoid fever, which is not so produced.

Most of the infectious fevers belong to a class termed *zymotic*, and are characterised by a rash, which is developed at stated periods on the surface of the body, and it is generally considered that these diseases are not infectious before the rash appears. "Fomites," or substances containing contagious affluvia, if not exposed to the air, can be preserved for six months, or even a year, and then develop the disease.

The non-infectious fevers are,—ague, simple fever, remittent fever, and yellow fever; the infectious which vary very greatly in their degree of infective power—typhus, typhoid, relapsing fever, small-pox, chicken-pox, whooping-cough, mumps, measles, scarlet fever, diphtheria, cholera, and plague.

Typhus Fever, due to overcrowding, especially when associated with poverty and want, is highly infectious; incubative period, from one to twelve days, the invasion stage quickly following, and characterised by violent delirium. Rash appears from fourth to seventh day, and the whole illness lasts from fourteen to twenty-one days.

Typhoid Fever is generally contracted by drinking impure water containing in solution the germs of the disease derived from decaying organic matter, or by inhaling air containing them. The period of incubation lasts from ten to fourteen days, the invasion stage being disclosed very insidiously. The rash appears from seventh to fourteenth day, and the sickness lasts altogether about thirty days or six weeks. It is also called Enteric, a prominent symptom being diarrhoea from ulceration of the bowels.

as vinegar and pyroligneous acid. (5) The gases, chlorine, bromine, iodine, ozone, sulphurous acid, and ammonia. The smoke of burning paper soaked in solution of nitre, or the vapour of burning tar.

2. *Disinfectants* are those agents which destroy infectious matter. They are divided into three classes.

1. The volatile or gaseous, such as chlorine, or sulphurous acid ; 2. The fixed salts, as permanganate of potash (Condy's fluid), and some of the chlorides and nitrates ; 3. Heat (212° F.), applied as hot air or steam for the space of half an hour to an hour. The first class possess active affinities for organic matter ; the second class disinfect by yielding up their oxygen, and are the active principles of the several patented disinfectant solutions.

3. *Antiseptics*, or those agents which arrest or prevent fermentation, such as a high (212° F.) or low (32° F.) temperature, the tar acids, viz., carbolic acid and creosote, and the fumes of sulphur.

As the *proper use of disinfectants* is for the chemical destruction of morbid poisons that have issued from the patient, all secretions, as they are voided (except under circumstances already mentioned) should be received into vessels containing a sufficiency of the disinfecting solution, to set up active chemical changes in the whole mass, and thus immediately destroy the poison contained in it.

To Disinfect the Room when the patient is in it, employ a spray producer, containing some disinfecting solution, for a few minutes night and morning, and scrubbing the floors frequently with soft soap and carbolised water. Non-absorbent materials, such as pottery and glass, should be scalded in boiling water, dried and freely exposed to the air.

Bedding, clothing, and unwashable woven fabrics must

be exposed for an hour to a temperature of 212° F. in ovens, and thoroughly baked. Solid furniture and the walls of the room itself must be disinfected after the patient has been removed, by burning sulphur in the following way :—The fire-place is closed, and the crevices in the windows are pasted over with strips of paper ; a pail, half filled with water, is put in the middle of the room, a pair of tongs are placed across it, and on them is laid a brick or an old tin tray, supporting a good-size piece (2 ozs.) of rock sulphur. This is set fire to, the door is shut and secured by strips of paper on the outside.

The sulphur, when lighted, burns, fills the room with dense fumes of sulphurous acid gas, and if any of the molten mass runs over the iron plate or brick, it falls into the pail of water, and is extinguished without any chance of setting fire to the floor. After twenty-four hours the door is opened, and fresh air is admitted ; the doors and windows being left wide open for at least twenty-four hours more ; everything is then well scrubbed, the walls re-papered, and the ceiling whitewashed.

If chloride of lime is used to disinfect the room whilst the patient is in it, about equal quantities of the material should be mixed with strong vinegar, and put in a saucer on a chair. Dissecting rooms, corridors, and passages are usually disinfected with chlorine gas, which can be made by mixing together, in a large flask, one part of common salt, with one part of black oxide of manganese, and two parts of oil of vitriol.

Nursing in Infectious Diseases.—In these cases, all the precautions given under the heading “Disinfection,” both as regards the room, the patient, and the attendants, must be followed out ; and all those points, which are common to every case of prolonged illness

and retention in bed, whether infectious or not, as the changing of sheets, feeding of patients, sponging and washing, and examination for bed-sores, must be carefully attended to.

(1) *Small-pox*.—In addition to attending to the points mentioned above, when about the eighth or ninth day the pustular eruption bursts and discharges its contents over the surface of the body, forming hard dry scabs, and giving rise to intolerable itching, the nurse must carefully cover the patient's hands over in flannel, or tie them in an old stocking, to prevent him from scratching the face and picking off the scales, which would result in severe pitting of the skin and permanent disfigurement.

Some plan is generally adopted to relieve the irritation, such as painting each little pustule with a solution of nitrate of silver, or olive oil, or covering the face with lint to prevent exposure to the light.

The room must be darkened, as the disease is generally accompanied by severe inflammation or ulceration of the eye (cornea); and the hair must be cut off closely from the head, for local application of remedies.

(2) *Typhoid*, or *Enteric Fever*, is accompanied by diarrhoea, and much attention has to be paid to the cleanliness of the patient; the bed-linen will require frequent changing; the vessels, before being used by the patient, must contain a small quantity of disinfectant solution, except when required for examination. The nurse must observe, very carefully, the number of times the bowels have acted during the day and night, and the character of the stools.

The temperature of the room should register from 55° to 60° F., being kept cool by having a large block of ice in a basin, on a table, in the centre of the room. The

dry tongue is also relieved by sucking pieces of ice till the sharp edges are rounded, and then swallowing them.

As the disease advances, sordes collects on the tongue, lips, and teeth; this must be removed by wrapping a piece of lint or soft rag, dipped in a solution of Condyl's fluid, or carbolic acid and water, round the forefinger, and gently rubbing the surface of the teeth. Avoid using a tooth-brush, as it only causes severe bleeding of the gums. The mouth must be wiped out with little pledgets of tow or cotton wool, dipped in some disinfecting wash, and held by means of dressing forceps, the tow being afterwards burned.

A careful examination must be made daily for bed-sores, and on no account must the patient be allowed to get out of bed.

(3) *Diphtheria*.—The nurse must take great precautions not to inhale any of the poison-germs from the patient's throat or lungs, and must, therefore, avoid stooping over the patient's face, or kissing the patient's cheeks. Handkerchiefs, used by the patient for blowing the nose, or expectorating into, must be immediately removed, and thrown into some disinfecting solution.

The throat must be washed frequently with some disinfecting solution by means of a spray-producer.

Quarantine of Patient.—In all infectious cases this must be carefully preserved by attending to the following rules, not only for the benefit of the sufferer, but to prevent disease from spreading to others:—

1. Isolate the case, by selection of a room at the very top of the house, and completely cutting off all communication with the other inmates, no one else being allowed to occupy a room on the same storey.

2. Remove all carpets, woollen goods, bed and window

curtains and hangings; also all articles of furniture, especially chests of drawers, sofas, and stuffed chairs.

3. Ventilate the room thoroughly, and have a good fire in it night and day.

4. Disinfect all bed and personal linen that goes out of the room, and immediately dip in boiling water all cups, saucers, and spoons, after being used by patient.

5. All vomited matter, expectorations, or evacuations to be received in vessels containing some disinfectant solution, except in cases where the excreta have to be examined by medical attendant. In infectious surgical cases, no sponges to be used, but wounds to be cleaned with old linen, cotton wool, or tow, which must be burnt after use.

6. Door to be kept closed and a sheet dipped in carbolic acid and water (1 in 100), to be hung up outside.

7. If possible, obtain a nurse who has already had the disease, and forbid all visitors to see the patient. In cases of small pox the nurse must previously be revaccinated.

8. All food must be brought up to the same landing as the sick-room, and left there for the nurse to fetch in herself when the bearer has retired.

Inflammation, or Congestion, of any part of the body or internal organ is due to an accumulation of the blood in that spot; when on the surface resulting in redness of the skin, swelling, increased temperature, and pain: there is an accumulation of arterial blood in the diseased spot, for a larger amount flows to it, and with increased rapidity, than returns from it by the veins. It is on this account that we obtain such immediate effects produced by placing the diseased part in different positions. If it is much elevated above the level of the heart, the amount of blood supplied to it is reduced, and the swelling and

tension are at once diminished ; if, on the other hand, the part is kept in a dependent position, the redness, swelling, and pain are greatly increased. Every little movement of the part aggravates the symptoms, especially the pain ; hence the necessity of absolute rest and elevation.

Accompanying an inflammatory action of any part we get the symptoms described under "Fevers." The blood, after passing through an inflamed spot, receives fresh accessions to its temperature, until at last the temperature of the whole of the blood and skin is proportionately raised, the watery portion is reduced, and as a general result we get a dry hot skin, parched tongue, headache, great thirst, scanty and highly-coloured urine, and delirium at night.

In nursing such a case as this, the inflamed part may require poulticing or fomenting ; or the medical man may prescribe cold to be applied in the form of evaporating lotions, to lessen the amount of blood going to the part, and thereby reducing the temperature.


As a general rule the room should be kept cool and well ventilated ; avoid direct draughts by the use of screens, give cooling drinks to relieve thirst, sponge over the patient's body in tepid acidulated water, try and induce sleep by placing the patient in the most comfortable position, darkening the room, and keeping everything quiet.

The local inflammation generally ends in resolution, *i.e.*, gradually disappearing, and the part resuming its normal proportions ; or in the formation of an abscess, a cavity lined by a membrane, from the interior of which a quantity of matter or pus is secreted. When this has taken place, the part should be frequently poulticed, the

heat and moisture favouring the process, and bringing the abscess to a head as quickly as possible. The other products of an unhealthy inflammatory process are ulceration, sloughing, and gangrene.

Nursing in Non-Infectious Cases.—(1) *In lung affections*, in addition to the usual points to be attended to as regards the sick-room and requirements of the patient, particular attention must be paid to the condition of the air which the patient breathes. The temperature will be required a few degrees above the usual, viz., to 70° F., but care must be taken that whilst raising the temperature the air is kept sufficiently moist, otherwise it irritates the lungs, and produces troublesome coughing. This can be done by means of the bronchitis-kettle, or by keeping damp towels in front of the fire.

The patients must be placed in as comfortable a position as possible, so as to relieve the respiratory movements; in asthma, they usually sit upright in bed, the recumbent position bringing on threatened asphyxia. In most chest complaints the patient generally lies on the affected side, to prevent the ribs on that side from moving, and so reduce the pain. Inhalations of steam or medicated vapour are administered to relieve the breathing, and if sudden spasmodic attacks of coughing come on, and threaten life by suffocation, the patient's face becoming dusky and lips black; then place them at once in a hot-bath, and, if necessary, use artificial respiration.

Poultices and fomentation will be frequently required; avoid placing a thick poultice on the chest as its weight will only add to the difficulty of breathing, the patient having to lift it with each inspiration. All nourishment should be given in a liquid form, and very warm, as it encourages the action of the skin and the secretion from the lungs,  considerably assist their respiratory organs.

In affections which attack the throat, various gargles and mouth-washes must be used ; if the former, a small quantity is taken into the mouth, the head is thrown well back, and the air of the lungs is forcibly breathed out, and, as it bubbles through the liquid on the top or the windpipe, it scatters it all over the fauces. Mouth-washes generally consist of Condyl's fluid and water, and are merely used to rinse out the cheeks and gums.

Although in all chest affections the semi-recumbent position is the easiest for the patient, he should occasionally be made to alter it, as the blood tends to accumulate in the lower or most dependent portion of the lung, and to increase the congestion or inflammation. The position also interferes with the return of the venous blood to the heart, and the results are that the lower extremities become cold and dropsical, — which, if not relieved — will gradually get very tense and full of fluid, till at last the skin breaks, and an open wound is produced. The nurse must examine the legs and feet : if cold, she should apply to them hot-water bottles, or hot bricks, wrapped in flannel ; and if swelled, raise them up on pillows.

(2) *Rheumatic Fever, and other diseases affecting the Joints.*—In these cases the limbs must be kept as much as possible free from all movement, and from exposure to the air. In acute rheumatism, the healthy action of the skin is abnormally increased ; the whole body at night being bathed in profuse perspiration, and accompanied by great weakness. To avoid catching cold, the patient, clothed in a flannel nightgown, should lie between the blankets. The joints are entirely wrapped in cotton wool and bandages, and kept under the bedclothes, nothing but the head being exposed to the air. Sometimes the joints between the cervical vertebræ become affected.

producing a painful kind of wryneck; if this occurs, wrap a large piece of cotton wool round the neck, and cover it over with a flannel bandage.

The patient must be fed by the nurse, the food chiefly consisting of milk. If confined for some weeks to bed, look out for bed-sores, and be very careful in letting the patient sit up in bed, as the fever is almost invariably accompanied by disease of the heart, and suddenly assuming the sitting posture might be followed by dangerous fainting. Should anything like this occur, or should there be any difficulty in breathing, the nurse must at once apply a mustard-poultice, or turpentine stupe, over the site of the heart.

The pressure of the bedclothes must be taken off the joints by means of cradles, and all jolting, or jarring, of the bed must be avoided.

(3) In *Cerebral Diseases* the temperature of the room should be lowered, if possible, to 55° or 50° F., and the room itself darkened by blinds over the windows, and all candles, lamps, or gas must be protected by screens. Perfect rest is absolutely necessary, as well as perfect silence in the room and about the house.

Nursing in Fractures.—In these cases the bed must be specially prepared, when the injury is to the lower extremities, by the use of fracture-boards, which are placed under the mattress to prevent the bed from slipping in the centre. If some time elapses before the leg can be attended to by the surgeon, after the patient has been put to bed, sand-bags should be laid on each side of the broken limb to keep it steady, and a piece of lint dipped in an evaporation lotion placed over the seat of fracture.

Sand-bags are long narrow bags, filled with the finest sea-sand, which is thoroughly dried by baking in an

oven. The material used should be sufficiently fine to prevent the sand getting out into the bed.

The pressure of the bed-clothes must be kept off the limb by means of a Salter's cradle, or one improvised, out of a band-box. This can be easily done by knocking out the ends of an old band-box, and then cutting it in half from the top to the bottom ; the sheet is then drawn over the patient, covering the uninjured leg, but not the cradle. The nurse must pay careful attention to the patient's position in the bed, as they are very apt to slip gradually down to the end, so that the feet project beyond, and are liable to be knocked against by anyone passing by. The posterior surface of the body must be examined frequently for bed-sores. For fractures of the lower jaw, the patient must be fed entirely by suction through a glass tube.

LECTURE III.

DETAILS OF NURSING.

The Nurse: HER CHARACTER AND QUALIFICATIONS.—It is absolutely necessary, in order to become a good nurse, that the person choosing the vocation should be physically capable of enduring the fatigue and confinement of the sick-room, otherwise her health and strength are likely to break down at the very time, perhaps, when her services are most wanted ; and this is particularly liable to occur if the case in hand requires very much night watching.

Then, again, in many people, lengthened confinement in-doors produces a depressed or irritable state of mind, which not only prevents them from doing their work as it ought to be done, but also re-acts on the patient's spirits, very much to his or her disadvantage. In such cases it is far better for the nurse at once to give up the care of the patient to some one more fitted than herself for the office.

In dealing with the sick, the nurse requires a great amount of *common sense*, together with considerable *tact in managing*, and *firmness*, both of *character and hand*, though it should be coupled with *gentleness*. Patients should never be allowed to have their own way when it is against the orders of the medical attendant.

She should cultivate the habit of observation in every feature of the malady, and inasmuch as the less a patient has to look after himself the better, the nurse ought even to think for him, and so anticipate his wants and desires. She must be *quiet* in her manner, *methodical* and *tidy* in her habits, and *punctual* in her engagements.

She should also observe the patient's idiosyncrasies, and, to a certain extent, give way to them. Some patients like being left alone, others prefer company. As her object in life is to save the lives of others, and her duties bring her constantly in face of suffering and death, the nurse should be a woman of delicate feeling, of religious character, and devoted to her calling.

The *relation of the nurse to the medical man* is distinctly marked. She should strictly carry out his orders as to diet and medicine in the treatment of the patient, and must never presume to use her own judgment in the non-fulfilment of his wishes.

It is the nurse's duty to report to the medical man at each visit the result of the treatment that has been pursued, or any changes she may have noticed in the patient's condition since his last visit.

Personal Requirements.—In the management of her own health the nurse will require special arrangements to be made as to her *sleeping accommodation*, her *nourishment*, and *recreation*. She should be provided with a separate room, communicating, if possible, with the sick-room, where she could take her meals regularly and retire to rest at night. No woman should act as nurse day and night, except in cases of emergency. If the case requires constant supervision, *two* nurses will be needed, so that one can rest while the other is with the patient.

Seven hours of undisturbed rest are necessary, and it is advisable that every nurse should be away from her patient at least nine hours out of every twenty-four, of which two hours should be spent in out-door exercise, especially when nursing infectious cases. Fresh air and exercise keep the functions of the body in good, active condition, and so enable her not only to perform her duties more satisfactorily, but diminish the chances of her own health breaking down, and her liability to catch the disease.

How to Dress.—The nurse should always be clean and neat, both in her person and dress, and should therefore study quiet neatness in the colours of her wearing apparel. For this purpose a short grey serge, alpaca, or print dress, which can easily be cleaned, is the most serviceable; long flowing robes are very objectionable. Avoid rustling silk dresses, because of the noise they make in moving about.

If cuffs, collars, or caps are worn, they must always be scrupulously clean, for nothing mars the good appearance of a sick-room so much as untidiness in the dress of the attendant.

The nurse should change her under-linen frequently. She should carry, attached to a band round the waist, a pair of scissors, a pincushion, well filled, a pair of dressing forceps, a thimble and a few needles. She should always wash her hands and face before having her meals, and whenever she leaves the sick-room for any length of time.

The hands must be carefully washed after dressing wounds or removing soiled vessels from the room, and especially before handling the patient's food.

Undressing and Dressing Patients.—One of the first duties a nurse has to perform after receiv-

ing a case into the ward, is to undress and wash the patient. No clothing should be allowed to remain on the bed or put under the pillow.

Before proceeding to do so, it is a good plan, if the patient is at all faint, to administer some stimulant, and let him lie quiet on the bed for a few minutes.

There are one or two rules which apply to all cases requiring undressing, viz., (1) always to remove the clothing from the sound side of the body first of all, then on the injured side : (2) do not begin to undress the patient till the bed is prepared and the clean body-linen is dried and warmed and ready to be put on : (3) never expose a patient unnecessarily : (4) save the clothing as much as possible, especially in dealing with the poor ; and (5) never handle the patient in a hesitating manner, but with firmness and gentleness combined.

If the patient is suffering from any infectious disease, or the clothes contain vermin, they should be removed to an oven and well baked at a high temperature, or else thoroughly disinfected by exposing them for twenty-four hours in an empty room to the fumes of burning sulphur.

To undress a helpless male patient, with a broken arm, seat him on the bed and commence removing the coat by slipping out the sound arm ; then, supposing the injured arm to be in a sling, remove the sling and carefully draw the broken arm out of the sleeve, having previously slit up the outside seam with a pair of scissors : next remove the waistcoat, unbutton the braces in front and slip them over the shoulders, and having unfastened the shirt-buttons in front of the sleeve, cut up the seam of the injured arm sleeve, slip the sound arm out of the shirt, pass it over the head, and draw it gently down the injured side ; then put on the night-shirt, having first of all opened the sleeve on the injured side, pass the broken arm through

it, pull the shirt over the head and work into the other sleeve the sound arm ; the buttons of the trousers are then unfastened, and the night-shirt being drawn well over the knees, the trousers are easily slipped off, socks and boots having previously been removed in the ordinary way.

If the injury is to the lower limb, say the thigh, and the clothes are dirty, the bed-clothes must be turned back to the foot of the bed, a macintosh thrown over the under-sheet and the patient laid in the middle. The coat, waistcoat, collar, and braces, which must be unfastened in front and behind, are removed as gently and quickly as possible.

The boots must next be taken off ; if elastic, they must be cut up both sides ; if lace, cut up in front ; or if buttons, these should be cut off one by one with a sharp knife. The boot is then well opened, and the ankle being held with one hand to steady the limb and prevent jarring, the other hand is used in drawing it off the foot.

The sock or stocking should be cut down the seam, and drawn off the foot, steadying the ankle in the same way as before. The shirt is then removed by drawing the sleeves over the head, and replaced by a clean one ; next, the outer seam of the trouser leg containing the injured limb is ripped up, waistband included, so that the trousers are completely open. The buttons in front are then unfastened, and a sheet being thrown over the patient to prevent exposure, the cut trouser leg is very carefully drawn from under the whole length of the leg to the inside, the thigh being steadied by an assistant, to avoid dragging. The body of the trousers and the other leg can then be easily drawn off while the sheet is kept over the patient.

To undress a female patient with a broken thigh, the shoes and stockings are first removed, as already described, The dress is then unfastened, the arms taken out of the sleeves and the skirt slit right up the front seam and gently drawn downwards from under the patient, the broken thigh being steadied by an assistant holding the foot. The petticoats are next removed in the same way.

The shoulders are then slightly raised, the bodice and stays unfastened and removed, and the arms slipped out of the chemise. The drawers are removed by slipping the hand behind and unfastening them at the back; then cutting up the front of the leg on the injured side through the waistband, carefully draw the portion away from under the thigh of that side and slip them off the other leg.

To dress the patient, the ends of the clean nightgown are rolled up, the patient's arms are put through the sleeves and the garment then slipped over the head and shoulders and gradually drawn downwards, whilst the soiled chemise is pushed down to the buttocks and then pulled away from under the body towards the feet and taken from the bed; if necessary, the nightgown can be slit open along the seam of the injured side. In all cases the nurse must remember that to the poor the destruction of their clothing is a matter of great importance.

Washing and Bathing Patients.—When the patient is undressed and in bed, the nurse should see that he is thoroughly clean. If necessary, he must be washed at once, particularly the injured part, and in fractures the limb must be well dusted over with violet powder or starch before applying splints and bandages.

It is very necessary, on receiving patients in the wards, to examine their heads for vermin; if they exist, the

hair should be cut short, and the head well washed with soft soap and carbolic acid ; also any vermin on the body-linen or bedclothes must be destroyed by at once removing these to be cleaned and disinfected, and putting on fresh ones ; it is a good plan, too, to sprinkle a quantity of insect powder over the bed and linen.

The nurse should enquire from the medical attendant whether the patients should be given a hot bath or not before putting them to bed. Washing patients who have been confined to their beds for some time requires considerable care, as the process is often very fatiguing.

The two great points to attend to, are not to tire or exhaust them, and to wash them in such a manner as to prevent any chance of their getting a chill. To do this, a small portion of the body only should be washed at a time, and well dried afterwards with a soft warm towel.

Never allow the patient to exert himself at all, and let some food or stimulant be given, either immediately before or after the operation. Care must be taken to prevent any water from falling on the sheets. The hands and face should be sponged over every morning and evening, the teeth well cleaned, and the mouth rinsed out every day.

The feet should be washed two or three times a week, and the whole body bathed at least once a week. In very feeble patients, great care must be exercised in washing and sponging them. Everything must be got ready before commencing to bathe the patient ; only a small part of the body must be uncovered at a time and as the process is very fatiguing, it should be done after breakfast. The bed must be protected from draughts by using screens, and the patients must not be allowed to assist

themselves too much, especially children, who, unless very prostrate, should be propped up by pillows in a sitting posture.

Commence by bathing, and then drying the face and neck ; next, undo the nightgown and the sleeves, slip out the arms, and bare the chest, sponge it over quickly and dry, then put on a clean nightgown, make the patient lie down, and draw the soiled one towards the legs, to uncover the abdomen ; then, having washed this part, turn the patient over on one side, sponge over the back, dry it well, pull down the clean nightgown, and, having turned the patient over again on the back, roll down the clean shirt in front, remove the soiled one altogether, and then proceed to wash the legs and feet. To prevent the bed from being soiled, a piece of macintosh-sheeting must be placed under the patient during the process of sponging.

Lifting and Carrying Patients.—In cases of accidents, the patient must be removed on a stretcher, or an improvised one, such as a door, shutter, hurdle, plank of wood, or two poles with coats fastened to them.

The improvised stretcher is placed at the patient's head, in the same direction as the body, and two bearers, standing one on either side of the patient, each passes one arm under the shoulders, and the other under the buttocks, clasp hands, lift up the patient, and carry him backwards on to the stretcher ; then, one bearer going to the head and the other to the feet, they simultaneously lift the stretcher, and carry the patient feet foremost. In order to keep the stretcher steady, the bearers should take short paces (18 inches), and walk in broken step *i.e.*, the one in front starts with his left foot, whilst the other behind starts with his right. The taller man

should always be at the patient's head, and the nurse, or third person, looks after the injured limb, to see that it does not get jolted whilst being carried.

When the patient is brought into the ward or house, the stretcher is laid on the bed, and stimulants must be administered before proceeding to remove the clothing (as already described), should there be any signs of exhaustion.

To raise a patient from the floor to the bed, two nurses will be required, one on each side of the person to be raised; then stooping down, they each pass one hand under the shoulders, and the other below the buttocks, and clasping them firmly together at the same moment, lift up the patient.

To carry patients from one bed to another the draw-sheet is used like a stretcher, two nurses, standing one on either side of the bed, grasp a corner of the sheet in each hand, then raise the patient, and lifting him over the foot of the bed, place him on a fresh bed, a sofa, or an arm-chair; if there is a footrail to the bed, the patient must first be moved across the bed, with the legs hanging over one side, then lifted up as before, and placed in an arm-chair, the draw-sheet being left under the patient, so that he can be lifted back to bed by the same means.

The draw-sheet is also used to turn a patient over from one side to the other, by rolling up one side of the sheet towards the body, holding the ends of the rolled-up side, lifting them up, and thereby tilting the patient over to the other side.

Bed-making.—To prepare the bed, a blanket is placed over the mattress, and covered with a sheet, both of which should have their surfaces perfectly smooth, and there is then less difficulty in keeping the sheet free from wrinkles.

As a rule, patients should lie between sheets, but in acute rheumatism and ague, where warmth is essential, they are generally put between blankets. Over the sheet is next placed a piece of macintosh, sufficient to cover the centre of the bed, and above it a draw-sheet, arranged in such a way, as to prevent any blood, or other discharge, from reaching the under-sheet. Occasionally a large piece of macintosh-sheeting is also spread over the upper mattress to protect it from being soiled, in cases of diarrhœa, dysentery, compound fractures, or after lithotomy.

The Draw-Sheet generally consists of an old piece of linen doubled and sewn together, or of a sheet smaller than those in use, folded square, so as to reach from the patient's shoulders to the knees, and wide enough to allow being tucked under the mattress on each side. It derives its name from the fact that it can be easily withdrawn when it is soiled, without changing the under-sheet. Bolsters and pillows, in use, must be provided with cases, which can be removed, and washed when necessary.

The patient lies in the centre of the draw-sheet, and is then covered with an over-sheet, a blanket, and a counterpane. In cold weather, a second blanket is often used instead of a counterpane, which, in all cases, must not reach down to the floor, as it is likely to hide from view dust and other things collected under the bed. Bed-curtains and valences must be removed.

Changing Sheets. — The under-sheet will require changing once a week, but the draw-sheet must be removed, and re-placed by a clean one, as soon as it is soiled. Great attention must be paid to the under-sheet, to have it smooth, free from wrinkles, and especially

from bread-crumbs, which are the source of much annoyance to the patient. Among the poor, when the under-sheet is changed, the upper one is usually put in its place, to save wear and tear.

In making the bed every morning, the clothes should be slipped off, and the fresh air allowed to circulate freely among the bedding. If the patient cannot move, it is better to change the sheets from the side by rolling them up lengthways with the bed; if, however, he is able to raise himself and so help in the operation, they can be changed from above, downwards.

To change the under-sheet, the nurse, carefully freeing the soiled sheet at the top of the bed, rolls it up breadthways under the patient's head, and clear of the bolster. Then, having loosely rolled up the clean sheet, leaving just enough unrolled to cover the bolster, this is placed over it, so that the clean and soiled sheet lie close up against each other under the patient's shoulders, and the two are then worked down together, the clean sheet being unrolled as the other is rolled up; the patient then, resting on his elbows and feet, is generally able to raise himself sufficiently to let both sheets pass under the buttocks; if, however, he is unable to do so, an assistant places both hands under the body, lifts it up as much as required, and the nurse quickly slips the sheets from under him; the legs are then gently raised whilst the soiled sheet is taken altogether away, and the clean one drawn down in its place.

To change the draw-sheet is more easily done. The patient, if helpless, is turned over to one side, and the soiled draw-sheet and macintosh are rolled up together lengthways with the bed until they come close up to the patient's back. The clean draw-sheet and macintosh

having also been loosely rolled together to about half their width, the unrolled portion is placed over that part of the bed from which the soiled sheet has been removed, so that the rolled-up portions of the two sheets lie close up against each other and the patient's back : the patient is then turned to the other side, passing over the two rolls ; the soiled sheet is taken away, and the other half of the clean one unrolled and smoothed into its proper place.

If the patient cannot be moved in this way from side to side, as in a case of fractured thigh, two nurses will be required ; the one, standing on the sound side of the patient, pushes out the soiled sheet, at the same time slipping the clean one under the body ; whilst the nurse on the injured side passes her hands under the patient, and helps to draw the sheets through, or else assists the patient to raise his body sufficiently to allow the clean draw-sheet to be laid smooth.

In changing the upper bedclothes, take off first of all the counterpane, and then the blanket ; do not hurriedly remove them together, as the patient is likely to get chilled ; then draw away the soiled upper-sheet towards the foot of the bed, as you gradually replace it by the clean one. When not very much soiled, some nurses put the clean sheet over the dirty one, and then standing at the foot of the bed, draw the latter away gently from under the clean one.

If a patient is very ill, changing the sheet causes great fatigue, and should therefore be done soon after taking a meal, or a small quantity of stimulant should be given to counteract the exhaustion likely to be produced. All soiled linen and clothes should always be at once removed from the bed, taken out of the room, and thrown into a bath

containing a weak solution of carbolic acid and until they can be taken away and washed.

Slops of every kind, especially the excreta, are thrown away immediately, unless the nurse has ordered to preserve the latter for the medical man's inspection, in which case they should be kept in another room, or in the w.c., and the vessels be carefully covered over with a piece of cloth saturated with some disinfecting solution.

Administration of Food and Stimulants

—In serious cases the nurse should be provided by the medical attendant with written directions as to the nature and quantity of food, and the times of its administration. One of the golden rules for the nurse to remember is, that no food other than that which is prescribed by the medical man must be given to the patient. The same rule holds good with regard to stimulants, but in some cases the nurse may be given greater license, and use her own judgment whether at times it must be given more freely, or withheld altogether.

Spirits are generally taken diluted with water, and, if possible, with food, and the quantity of alcohol given must always be accurately measured in a graduated glass.

Food is usually given at stated intervals—every two or three hours; but in many cases it has to be given very much more frequently, and oftentimes administered all through the night. The nurse has to decide for herself how long the patient should be allowed to sleep over the time without taking food. The best plan is for the nurse to ascertain from the medical attendant the amount of food he wishes the patient to take in twenty-four hours, and then make a scale of quantities for regular intervals.

The food should be nicely served up; if hot, let it be

hot, and not lukewarm. Do not let the plate be crowded with eatables, and see that the plate, knife, fork, and spoon are scrupulously clean, and not merely wiped over with a cloth, and left greasy.

The nurse should always have ready at a moment's call some form of nourishment—such as custard pudding, jelly, biscuits, wine, or milk, which must *not* be kept *in* the sick-room, but outside in some cool place ; for not only do they become stale and poisoned by being kept in the room, but nothing gives the patient a greater distaste for food than constantly seeing it before him. It should be placed on a table outside the room, and carefully covered over with fine gauze to protect it from dust and flies.

Food should never be forced upon a patient excepting in some cases of absolute necessity ; a little persuasion should be employed to make him take something, if only a small quantity ; but do not worry him by pressing it on him. Very often he may be tempted to eat if the food is brought to him as a surprise, especially any little delicacies that are out of season. If, however, he refuses to be tempted, do not leave it at the bedside, hoping that perhaps he will take some later on, as it almost invariably under these circumstances remains untasted, and very rapidly spoils.

Drinks (especially milk), must be frequently changed, as they absorb the poisonous gases in the room, and soon become unfit to drink.

How to Feed Patients.—If the patient is unable to sit up in the bed, the nurse must pass her left arm behind his shoulders and gradually raise him into an upright posture (except in cases where it is absolutely necessary that the patient be kept lying

down), and feed the patient with a spoon held in right hand. Any liquid food is put into a feeding , having a spout to it, or into an ordinary tumbler, a sucked through a glass tube, 12 or 14 inches in length with a curve at the end nearest the mouth.

In feeding helpless patients with an ordinary cup it should not be more than half filled; the nurse then raises the patient's head, and putting the cup to his lips, lets him slowly draw the contents into his mouth, and must avoid pouring it into his throat or spilling it over the night-dress.

Administration of Medicines.—As a general rule, medicines are to be given between meals; if, however, they are ordered for special purposes, definite directions should be given as to the proper time and mode of their administration. Some medicines have to be taken the first thing in the morning on an empty stomach; others, immediately after taking food.

All medicines should be carefully measured, in a graduated glass, and given regularly at the hours prescribed, for many of them contain poisonous preparations; if the nurse forgets to give a dose at the proper time, and then gives a double one when the next is due, the consequence may be very serious, and even prove fatal to the patient.

Medicines and lotions should never be kept near each other, as accidents occur at night in giving one for the other; the latter should, if possible, be kept in fluted bottles, so that they can immediately be recognised by the touch when taken in the hand.

The glass in which the medicine is given should always be well rinsed out after each dose, and especially when using the same glass for several patients: a special

glass should be used for strong smelling or oily medicines, which must never be poured out within sight of the patient, but brought to him, together with anything that is given to cover the taste, so that it can be taken immediately after the dose.

Sick Diet Table.—The following forms of diet are those generally prescribed for the adult in-patients at the University College Hospital, London :—

Full Diet.—12 oz. bread : 8 oz. potatoes : 6 ozs. meat cooked) : $\frac{3}{4}$ pint soup on alternate days : 4 oz. rice pudding : 1 pint of milk : 1 pint of beer.

Middle Diet.—12 oz. bread : 8 oz. potatoes : 4 oz. meat, or 8 oz. fish : 1 pint of milk : 1 pint soup, or 4 oz. rice pudding : $\frac{1}{2}$ pint of beer.

Spoon Diet.—2 pints of milk : 1 pint beef-tea : 12 oz. bread : 2 oz. arrowroot, and 1 oz. sugar, made into jelly.

Effects of Remedies.—When medicines are prescribed in order to produce special effects, as emetics, or aperients, the medical attendant should mention the fact to the nurse, who will then carefully observe the results, and report accordingly. If a patient is particularly susceptible to the action of certain medicines, the medical attendant should be warned of the fact. If any medicines produce marked symptoms, which were not anticipated, such as griping pains, convulsions, &c., the nurse should refrain from giving them, and at once inform the medical man.

LECTURE IV.

DETAILS OF NURSING.—*Continued.*

Observation of the Sick.—The nurse must cultivate the habit of observing the patient in every feature and change of the malady, and should be able to detect, at once, any approaching faintness or insensibility. She must learn to think for the patient, as the less he has to attend to himself and his wants, the better. She should notice his likes and dislikes, and give way to, rather than oppose them.

It is also of great assistance to the medical attendant if the nurse adopts the plan of taking notes: it enables her to answer questions accurately, to remember more easily facts concerning the case, quickens her powers of observation, and gives her an increased interest in her work. She should note the date, name, age, sex of patient, whether married or single, of what occupation, and any previous diseases he may have suffered from.

Then a short history of the case, state of the patient on admission, whether feverish, cold, or faint; if an accident, how produced, and when; if any bruises, bleeding, or deformity; notice the state of the bowels, if they act frequently or not, if there is any vomiting or nausea; and the state of the urine, its quantity, colour, or deposit.

Rigors, or shivering, accompanied by chattering

teeth, and general feeling of chilliness or cold, yet on taking the temperature of the body during the fit, it will be found to be abnormally high ; after the rigor passes off, the patient breaks out into a profuse perspiration, and is very exhausted.

Notice the duration of the rigor, what effect it has on the patient, and take the temperature while it lasts ; it usually indicates, when occurring at the commencement of an illness, some severe complaint or fever. When it comes on during the progress of a severe surgical case, it denotes the absorption of pus (matter) by the veins (pyæmia), and indicates the formation of an abscess, either under the skin or in the internal organs.

Sleep.—In health this phenomenon comes on usually at that time of day, and in that position of the body, when the circulation through the brain is most sluggish, viz., at night, and lying down. It is the period during which the brain is in a state of rest, or repose ; a condition, which is necessary to all parts of the body, which are the seat of active change, and for the healthy performance of their various functions.

In the case of the brain, if the alternation of work and rest occurred at frequent intervals, as in the case of the heart and lungs, the result would be highly inconvenient ; hence we find, that here the period of repose occurs at long intervals, and must, therefore, be proportionately long.

During sleep, the blood supplied to the brain being only required for its nutrition, and not for bringing supplies of active nerve energy, is reduced in quantity, and the result is that the organ has a pale or anæmic appearance ; and this circumstance, favoured at night by the recumbent posture, darkness, silence, and absence of all

impressions on the organs of sense, both favours natural sleep, and explains its occurrence.

In health, the amount of sleep necessary is proportionate to the mental wear and tear during the day, and, in the adult, should be from six to eight hours in the twenty-four. During this condition, the reparation and nutrition of the tissues goes on very rapidly and favourably ; hence a larger amount of sleep is required by infants, growing persons, and convalescents.

The nurse must observe whether the patient's sleep is sound, or disturbed by waking up suddenly from time to time without apparent cause, and then going off to sleep again. The total amount of sleep must be noticed ; whether the patient is very restless or not, and if the breathing during sleep is quiet or noisy.

Pain is caused by pressure on the nerves, the terminal endings being irritated, and the result conveyed by the sensory nerves to the brain, when we become conscious of pain produced. Generally the pressure is due to serous effusion.

The character of the pain must be noticed : whether *dull* and *aching*, as in congestions of the liver and head, in periostitis, and in gout ; a *burning* or *throbbing* pain, as in inflamed parts subject to pressure, as abscesses of the hand or fingers ; *gripping* or *twisting*, in disease of the intestinal canal ; *cutting*, *shooting*, or *stabbing*, in cancerous tumours, and in neuralgia.

The seat of pain is very important to notice, as it often indicates the position of the mischief ; at other times it affords useful indications, by the part affected with pain being in connection with the seat of the disease, by the intervention of nerves traceable from one to the other. Thus, hip-joint disease causes pain in the knees ; in-

inflammation of the kidneys, or stone in the ureter, will cause pain in the groin, thigh, and testicle; disease of the womb, pain in the loins; inflammation of the liver, pain in the right shoulder; and disease of the heart, pain in the left arm.

The extent of the pain must be noticed.

Position of Patient is often highly characteristic, and must be noted by the nurse. As a general rule, in acute diseases of the internal organs, the patient will lie on the affected side, to prevent movement of that part, which gives rise to pain.

A helpless attitude on the back indicates loss of power in cases of paralysis, and exhaustion in fevers; whilst in such cases, the assumption of a position on the sides, as in sleep, is a sign of commencing recovery.

The *semi-recumbent* posture, with the head raised by pillows, or with the body bent right forwards, denotes severe disease of the lungs or advanced disease of the heart.

Lying on the back, with the legs drawn well up so as to relax the abdominal muscles, is very characteristic of painful diseases of the abdominal cavity (peritonitis). In children, as the pain passes off, the legs are gradually stretched out, and the patient goes to sleep. In painful diseases of the viscera, however (as colic), which is relieved by pressure, we often find the patient lying on the stomach.

In diseases of the chest, especially in cases of effusion into the pleura (lining membrane of cavity of chest), we find the patient lies with most ease and comfort on the diseased side, so that it remains fixed, and respiration is carried on by the other lung entirely.

Skin.—This structure exhibits very important changes in disease, and must be very carefully observed.

In fevers it quickly becomes hot and dry, its temperature rising several degrees above the normal ($98^{\circ}\cdot4$ F.). At other times it becomes unusually moist. In syncope, or collapse, it becomes cold and clammy. In debility, or great weakness, such as after typhoid fever, it is covered with profuse perspiration; and, in phthisis, this sweating usually occurs at night, leaving the patient in a regular bath.

The skin must also be examined for any rash, especially in the folds of the neck, beneath the arms, and where the patient lies. Notice the colour and character of the rash, where it first appears, and whether it itches or is painful.

In small-pox, it first appears under the skin of the forehead or face, is raised, and feels like shot; in scarlet fever, it appears a uniform, bright-coloured blush, over the whole body; in typhus, as small purple or brown spots on the belly; in typhoid or enteric, as small rose spots, which fade on pressure; in measles, it first appears on the face and chest in crescentic patches; in herpes, or shingles, after great irritation, the rash appears at the painful spot in the shape of a crop of watery pimples. After scarlet fever, the whole of the skin peels off, or desquamates. In jaundice, the blood charged with bile, stains the skin a peculiar yellow colour; and, when the lungs are not acting properly, so that the venous circulation becomes impeded, and the blood is not sufficiently oxidized, the lips become very dark, and the skin dusky in colour.

Examine the *lips*, whether pale as in anæmia, (blood lessness), dry, or the seat of aphthous ulcers, as in consumption, and towards the close of febrile affections. A crop of vesicles or blisters (herpes), on the lips often *companies* a severe attack of catarrh.

Appetite and Thirst.—Notice whether there is loss of appetite (anorexia), or distaste for food (nausea); whether all that is ordered is taken or not, if so, whether with or without relish. A failing appetite is an unfavourable sign in chronic maladies.

A voracious appetite, especially in children, indicates irritation of the stomach, and is frequently caused by intestinal worms: it is seen, in some phases of consumption, and is common during convalescence from fevers. A depraved appetite is commonly met with in pregnant women, in hysteria, and in some forms of mania.

Thirst is a common symptom of disease—it is present in active inflammations and violent febrile attacks, in accidents, where there is sudden loss of blood, and in many diseases—as cholera, diabetes, dropsy, and phthisis. Note the amount of liquid taken in twenty-four hours.

Vomiting.—When dependent on diseases of the stomach and bowels, notice the length of time after taking food, at which it occurs. Usually it is preceded by nausea, but in brain diseases this is not the case, and the act takes place without any effort; when in any illness it occurs again and again, it indicates an unfavourable complication, except in pregnant women, when it usually comes on regularly every morning on rising.

Vomited matters should be kept by the nurse for the doctor's inspection, unless she is ordered not to do so; notice if the vomit consists of food apparently unchanged; if digested food, or merely clear liquid—whether it contains blood or not—this is usually of very dark colour, when due to ulceration of the stomach, the blood looks like coffee-grounds—when in large quantity and florid colour, generally due to rupture of blood-vessels in the stomach.

Cough and Expectoration.—Coughing is a violent expiratory effort, by which the air-passages are freed of their contents; the act of expulsion is called *expectoration*, and the matters expelled are known as *sputa*.

Observe whether the cough is *dry* or *moist*, *i.e.* with or without *sputum*; if the patient coughs mostly at night when lying down, or in the day when sitting up, and whether there is much straining or lividity of the face. In disease of the upper part of the larynx, the cough is dry and accompanied by a hoarse voice. Notice whether the cough is attended with the sharp pain (pleurisy) or not, or followed by a sudden rush of air into the lungs, giving rise to a loud whoop. *Hiccough*, which is a form of noisy inspiration, chiefly affecting the diaphragm, is a very unfavourable sign when it occurs towards the termination of an acute malady.

The Expectoration, or *Sputum*, should always be received in a vessel containing water; if the expectoration is offensive, a small quantity of carbolic acid, or Condyl's fluid, can be added to the water in the spittoon. Young children frequently swallow expectorated matters, which the nurse must try to prevent.

Notice the quantity of matter expectorated in the day or night, and also its character; if very dense (purulent) it sinks to the bottom of the fluid in the spittoon, but if mixed with mucus full of air-bubbles or portions of lung tissue, it floats on the top.

In the first stage of pneumonia, the sputum consists of tenacious mucus intimately mixed with blood, which gives it a rusty colour; at other times it is tinged or streaked with blood (pneumonia and phthisis). Sometimes large quantities of fluid blood are coughed up, causing sudden

death, and due to ulcers in the lung opening into a blood-vessel, or an aneurism bursting into the chest.

Copious hæmorrhage from the lungs, as from rupture of a vessel in those organs, is known as *hæmoptysis*, and the blood is generally bright; while an equally copious discharge of blood, by vomiting from the stomach, is called *hæmatemesis*, and the blood is generally dark.

The Secretions. — The evacuations from the bowels must be received in vessels containing some disinfectant solution, unless directions are given to the contrary. Note the frequency and character of these actions, whether there is *diarrhœa* or *constipation*. May be *pale* like chalk, from absence of bile; or *black*, from taking preparations of iron or bismuth. The discharges may consist of *mucus*, *tenacious lymph*, or *pus* (matter); or they may consist of *blood* poured out by the vessels of the intestines generally, by a bleeding artery laid bare by ulceration, or by enlarged veins of the lower bowel (piles).

The Urine, in health, is of a light amber colour, perfectly transparent, has a peculiar faint odour, which disappears on cooling, and a specific gravity of 1005 to 1033. The average quantity voided in twenty-four hours, is about two imperial pints. In fever it is *reduced* in quantity, *high-coloured*, and has thick *red deposit*. May contain *blood* or *pus*. In diabetes contains *sugar*, and is passed in large quantities. Note the amount passed in twenty-four hours, if with any pain before or after passing it, the colour, specific gravity; whether any deposit after keeping, or deposit passed during micturition.

Bed-sores are caused generally by a patient being allowed to lie for too long a time in the same position, especially when the body is emaciated; the most prominent bones then exercise an undue pressure on the soft

parts, which give way, the skin becoming tender, painful, and inflamed ; and, if the pressure is not relieved, finally breaks, and forms an open sore.

The parts of the body where bed-sores are generally found, are the shoulder-blades, the elbows, all down the spine, the buttocks, and the heels. The nurse should carefully examine these parts daily, taking the opportunity of doing so when washing the patient, and using the necessary precautions for preventing them from becoming inflamed.

If the patient's confinement to bed is likely to be a long one, the back must be frequently washed with soap and warm water, well dried with a warm towel, and then dusted well over with violet or zinc powder ; or carefully rubbed with spirits of wine, brandy, eau-de-Cologne, or painted with collodion, to harden and protect the skin. Equal parts of olive oil and brandy, well rubbed in, are very efficacious. The patient's position in the bed must be altered frequently, and pressure removed by means of pads or air-cushions. Horsehair pillows, cut out in the centre, can be used with benefit. The tender spot can be protected by a piece of amadou plaster from which the centre has been cut out ; and by a water pillow placed under the hips to raise the patient's body.

Paralytic cases will require a water-bed, and care must be taken in using it, as it easily gets damaged. It should never be lifted when full of water ; place the empty india-rubber water mattress on the bedstead or palliasse, pour warm water into it, until it is about half full, then blow some air in so as nearly to fill it. A blanket and sheet are then placed on the mattress, and the patient's body will float comfortably on the bed. Water-pillows should always be filled in the same way.

Circular-pillows, with a hole in the centre, should be made by the nurse, out of old soft linen or calico. They possess the advantage of being economical, easily made, and changed, and can be burned when no longer wanted.

Delirium is due to a morbid condition in the circulation within the brain; it may be brought on by anæmia or hyperæmia, but this the medical man must determine. The degree of violence displayed bears an exact relation to the rapidity and force of the arterial current, and to the strength of the patient.

In the violent form, ice or cold water must be applied to the head, which should be kept raised, to reduce the circulation; whilst in the low muttering form, the head must be kept level with the body, food and stimulants being administered freely.

Low muttering delirium always indicates great nervous prostration, and the system must be liberally supported. In delirium tremens from abuse of alcohol, where there is high state of fever, the delirium is maniacal, with trembling of the whole body.

The room must be darkened, and patient kept quiet; the nurse must be firm and never show fear. To prevent the patient getting out of bed, pass a sheet over it, and tie it underneath. The nurse must never contradict a delirious patient, but appear interested in what he says.

Exercise great care and watchfulness over the patients. Avoid rough usage, but try by gentle persuasion to control their movements; and should they get out of bed, persuade them to go back again and try and go to sleep. Fasten the windows securely top and bottom.

The Pulse is due to the pressure which the blood exercises on the walls of the arteries, when it is impelled through them each time that the left ventricle of the

heart contracts; its character will consequently be modified by the condition of the heart and blood-vessels.

The pulse is usually felt at the front of the forearm, two inches below the wrist, and about half an inch from the outer edge, by gently pressing the tip of the forefinger on the radial artery. It can, however, be felt in any artery of the body, if sufficiently superficial.

While examining the pulse there should be no pressure on the artery, in any part of its course between the spot where it is felt and the heart, by tight sleeves or ligatures. Its frequency is measured by the seconds-hand of a watch, by counting the number of beats in fifteen seconds, and then mentally multiplying it by four.

The healthy pulse is uniform, moderately full, and swells up slowly under the finger. In old age it becomes harder and slower. The average number of beats per minute varies according to age. At birth, 140; in childhood, 100; in adult age, 75; in old age, 70; in decrepitude, 80—generally quicker in women than men. It is increased by exertion, excitement, and after taking food; but is retarded by cold, sleep, fatigue, and want of food. It is quicker when standing than sitting, and in the sitting than the recumbent position.

The pulse in disease is subject to great variations. It should be counted morning and evening, and the number registered on a chart kept for the purpose, together with the temperature of body and respirations.

Inflammation and fever are indicated by a *rapid pulse*, which, however, is full and strong. If very rapid, but small, it shows great debility, as in the last stage of typhoid fever.

Temperature-taking.—The temperature of the human body, termed its *animal heat*, is due to and

maintained by the chemical combination of the carbon and hydrogen of the blood with oxygen, which takes place principally in the lungs during respiration, but also occurs largely in the minute structures of every part of the body, wherever this interchange is effected in the tissues.

The temperature of the blood in the human being varies from 100° to 101° F., whilst the normal temperature of the human body, when registered by a delicate instrument, called the clinical thermometer, is invariably in health 98.4° F., the difference being due to the extensive cooling surface over which the blood traverses in passing through the capillaries of the skin.

The temperature of the body is maintained at its normal height, when exposed to variations of heat and cold, by the function of the skin, the loss which occurs by radiation and evaporation from its surface, preventing it from rising above the average. In disease the temperature varies considerably, and when at 100° or upwards always denotes the existence of fever; in some fatal cases it has fallen before death to as low as 71° F.

The Clinical Thermometer, by which the temperature of the body is ascertained, is a very sensitive, mercurial maximum, self-registering instrument, with a uniform and correct scale, having a range from 90° to 112° F. Each degree should be one-fifth of an inch apart, and exhibit also 5ths F. of degrees.

The index is a bit of the mercury detached from the column in the stem of the instrument.

Directions for use.—The index is set by holding the instrument firmly in the hand by the stem, and giving a *single rapid swing of the arm*, which will bring it down the stem, the rest of the mercury being in the bulb;

the swing is then repeated till the top of the index is just below the line indicating 98.4° F. The index having been set, the patient's arm is drawn away from the chest, and the bulb of the thermometer is placed tightly in the axilla, between a fold of skin; the arm is then brought down again to the side so as to maintain the instrument in position for five minutes, when it must be carefully and gently removed, and the *top of the index*, viz., that end farthest from the bulb, will denote the maximum temperature of the part; the patient ought to lie on the side, so as to completely close the arm-pit, which is the seat of the thermometer, and he should have been at perfect rest in bed for at least one hour before the observations are made. The temperature ought to be taken twice daily, at the same hour every day, generally between 7 and 9 a.m., and 5 and 7 o'clock p.m., throughout the whole period of sickness. The pulse and respirations should also be noticed at the same time, and recorded on a chart kept for that purpose.

Precautions.—The most trustworthy parts to take the temperature are in the axilla, or between the thighs. It is sometimes recommended to be taken in the mouth, under the tongue; but this is not trustworthy, but likely to vary with the quantity and temperature of the air passing through the mouth in respiration. In children, it is a dangerous practice, as they are liable to break off the delicate bulb. The thermometer should be warmed before use, by holding it in the hand until the mercury rises in the stem to 98° .

Temperature in health.—The normal temperature is 98.4° F.; if it rises to, and remains above, 99.5° , or falls below 97.3° F., it indicates the presence of disease. Temperature rises from morning to midnight, and falls be-

tween 1.30 a.m. and 7.30 a.m. The lowest temperature occurs about 6 a.m., and it is a noticeable fact, that in fatal cases of illness death most often takes place between 4 a.m. and 6 a.m.

Temperature in disease.—A persistent high temperature, even without other signs, indicates rapid phthisis. During rigors in ague, when the patient is complaining of great cold, the temperature often registers 104° F. In disease where a temperature of 105° F. is reached the patient is in imminent danger, and when it rises above 106° to 108° or 109°, the case will almost, without doubt, be fatal.

In typhoid fever, a sudden and marked reduction of temperature indicates hæmorrhage, from ulceration of the bowels, and probable approach of perforation. Stability of temperature from morning to evening is a good sign; but a bad one if it remains high from evening till morning. A fall of temperature from evening to morning denotes improvement, but a rise of temperature from the evening till the morning, shows that the patient is getting worse. A fall in the temperature, when the crisis of the disease occurs, unless excessive, is a good sign.

Application of Cold or Hot Water to the body is employed as a remedial agent, in many cases of disease, notably in fevers, to reduce high temperatures; when applied to the skin it acts differently, according to its temperature.

The immediate effect of cold water, when brought in contact with the skin, is to drive the blood out of the capillary blood-vessels on its surface towards the internal parts, the muscular fibres, in the coat of the vessels, being stimulated to contract; the skin becomes white or pale blue, and a sensation of cold, followed by shivering, is pro-

duced; after a few minutes, in the healthy person, this condition of temporary shock is followed by reaction; the heart's action is increased, a larger supply of blood is sent to the surface of the body, the blood-vessels dilate, the skin becomes bright scarlet, a pleasant sensation of warmth is produced, and the good effects of the application of cold result.

When hot water is brought in contact with the skin, the immediate effects are the opposite to those produced by cold: the muscular tissues are relaxed, the blood-vessels dilate, the blood is drawn to the surface of the body to the relief of the internal organs, the skin becomes bright red, and its temperature is raised. If the application is prolonged for any length of time, or the heat is excessive, then evil effects are produced, the heart's action becomes feeble, and vomiting, faintness, and prostration are the result.

The good effects of the application of cold to the body are in proportion to, and dependent on, the process of healthy reaction, which follows the stage of temporary depression; whilst, on the other hand, the good results of heat, when applied to the body, are due to its immediate effect, and are as follows: (1) the surface of the body is cleansed; (2) the skin and other secreting organs are stimulated to act; (3) the general circulation is increased; (4) the blood is drawn from the deeper parts to the surface, tending to reduce congestion of the internal organs; (5) the muscular tissues are relaxed, pain is relieved, and sleep induced; and (6) the temperature of the body, if below the normal, is restored.

Baths, and how to give them.—*The Cold Bath*, which varies in temperature from 50° to 65° F., is an excellent means of invigorating the capillary circulation, and

so enable the system to resist atmospheric changes, and by exciting the healthy action of the skin, may aid that organ in removing disease. It must not be continued too long, or, instead of tonic effects, depression will follow; two or three minutes, rapidly sponging the body over, is often quite sufficient. The best time for a bath is in the morning, while the body is warm.

In giving cold baths to children, the best plan is to make them stand in a warm water bath before a fire, and rapidly sponge them over with cold water from another vessel, immediately following it up with the application of a warm, dry towel.

The Warm and Hot Bath are very valuable therapeutic agents in many affections. They are used to equalise the temperature of the body, to soothe the nervous system, to promote perspiration, to relax the muscular (as in convulsions) and cutaneous system, and to equalise the distribution of blood by attracting to the surface any accumulation of it congestion in the internal organs.

The temperature in the *warm bath* varies from 90° to 100° F., in the *hot bath* from 100° to 110° F., and must always be registered by a mercurial thermometer being placed in it; roughly the temperature can be guessed at by placing the back of the hand in the water. A hot bath should be given in front of a good fire, and a warm blanket be in readiness to wrap the patient in directly he leaves it. The patient can remain in the bath ten to fifteen minutes, and the temperature should be maintained by additions of fresh hot water poured down the side of the bath.

In bathing children, seat them up to the neck in hot water, and apply to the head, for about three minutes, a towel or sponge squeezed out in cold water, to prevent a sudden rush of blood to the head. Some children are

very shy of hot water, especially if they see the bath filled from a boiling kettle, giving off volumes of steam. To allay their fear, cover the bath with a large blanket or large flannel petticoat, strip the child, place him upon it, and gently let him down with the covering into the water.

The graduated bath has been used in Germany to a great extent to reduce persistent high temperature. The patient is laid bodily in a bath of about 95° F., which is gradually cooled down to 65°, and sometimes lower, by adding cold water to the bath in which the patient is placed; the process must be done slowly, taking fifteen to twenty minutes, the immersion sometimes lasting longer; the patient is then removed, put to bed, between blankets, and warm bottles or hot bricks applied to the feet.

The Vapour Bath.—The patient, undressed, sits upon a wooden-seated chair, and is closely enveloped, chair and all, in blankets fastened securely to the neck and reaching down to the floor. A vessel containing about a gallon of boiling water is then placed under the chair, and the clothes well secured to confine the vapour. After a few minutes a red-hot brick, or heated piece of iron, is put in the water and the clothes again well closed in; the patient can in the meanwhile sip one or two tumblers of cold water, and have a towel, wrung out in cold water, fastened round the forehead to prevent headache. After twenty minutes the patient must be rubbed down dry, and put to bed.

The Hot-air Bath.—In this bath the blankets are used in the same manner as above, but a spirit lamp is substituted for the water in the vapour bath. The lamp is lighted, and as the spirit burns, heat is generated around the patient, and perspiration produced. This kind of bath

n be given to a patient when in bed. The bedclothes over the patient are raised by placing a cradle (used in fractures) under them ; the lighted lamp is then placed under the bed, and the clothes tucked in all round, until the desired effect has been produced.

The Mercurial Vapour Bath is used as follows :—The patient sits in an ordinary cane-bottomed chair, and is covered in, as before, with one or two blankets. An apparatus, consisting of a kind of tin case, containing a spirit lamp, over the flame of which a small dish of calomel is placed, while around this a sort of saucer filled with boiling water, is then placed under the chair, the lamp is lighted, the blankets well covered round, and the patient sits in this position for twenty minutes, during which time the water and calomel will be found to have disappeared. A clean, warm nightgown is then put on, and the patient placed in bed, without previously rubbing the body over.

The cold douche is used to reduce violent delirium. The patient is placed in a warm bath, and cold water is made to impinge on the head and shoulders with considerable force, the nervous impression produced being correspondingly great.

Medicated Baths are those containing some medicinal substance, in solution, in the water. *Alkaline* baths, frequently given in cases of chronic rheumatism, contain one pound of common washing soda to thirty gallons of hot water. The *iron* bath, used for scrofulous children, consists of the addition of half an ounce of sulphate of iron to every four gallons of water ; and the *tannin* or *rose bark* bath, is prepared by boiling three handfuls of bruised oak bark tied up in a linen bag, for half an hour, in three quarts of water, and adding this to the child's bath.

LECTURE V.

APPLICATION OF LOCAL REMEDIES—NURSING OF INFANTS AND SICK CHILDREN.

Poultices, or Cataplasms, are used for the sake, of the warmth and moisture they convey ; and, on account of their soothing action, are recommended for the relief of pain, and to facilitate the formation of pus (matter) in abscesses and boils. They are made of a variety of substances, as bread, linseed-meal, carrot, charcoal, &c. ; but of whatever material the poultice is composed, it should be hot, of uniform consistence throughout, and light.

When used to mature abscesses, or disperse inflammation, they should extend beyond the limits of the inflamed tissue ; but afterwards, when the abscess has discharged, they should be little larger than the opening through which the matter is escaping. A large poultice if long-continued, soddens and irritates the part, and is liable to develop fresh boils round it. In deep-seated inflammations, they must be removed as soon as they begin to cool ; but the first one must not be disturbed till a fresh one is ready to be applied. It must be as hot as the patient can bear it ; and the heat can be retained for a longer time by covering the poultice over with oiled silk. When the poultices are discontinued, the skin

should be rubbed dry with a soft handkerchief, and then covered with flannel. In paralysed patients, the poultice should not be too hot, or sloughing of the skin may follow. In poulticing wounds, get the patient ready first, then uncover and wash the wound, remove the old dressing, and lightly cover the wound over whilst you prepare the poultice; never get into the bad habit of making the poultice first, and then keeping it warm at the fire, whilst the patient is being prepared.

Linseed Poultices should be prepared with the crushed linseed before the oil has been extracted and should not be obtained from the grocer. The bowl, in which it is to be made, must first be heated by rinsing out with hot water, then *boiling* water is poured in, according to the size of the poultice required. For ordinary purposes, about half a pint is sufficient. The linseed is then quickly sprinkled with one hand into the water, crumbling between the fingers any small lumps, and with the other hand the mixture is constantly stirred with a knife or spatula, till a thin, smooth dough is formed. This is then quickly spread on a piece of warm linen, cut rather larger than the required size. The extra margin is first doubled on itself, and then over the edge of the poultice. Instead of linen, the poultice can be spread on tow, which, however, must be carefully pulled out, so as to present a level surface. Care must be taken not to have the poultice too wet and sloppy; it should just be sufficiently moist to turn out of the bowl without sticking to the sides.

Bread Poultices.—Slices of stale bread, from which the crust has been removed, are put in a basin, boiling water is poured over them, and the vessel placed by the fire for a few minutes. The water is then drained off, some fresh

boiling water added, which is again poured off, and the bread pressed, beaten with a fork, and made into a poultice. Bread poultices are used for their non-irritating, bland properties, when only a small surface requires the application of moist heat, such as the tips of the fingers, or the toes. They are not so useful as linseed poultices, as they very quickly become cold.

A Jacket Poultice is used in bronchitis and pneumonia, to go round the chest. It consists of linseed poultice spread over a very large piece of linen, so as to completely cover the patient's back and chest, and is secured with tapes fastened in front, and over the shoulders. The patient lies in the poultice, and the ends are brought well round under the armpits to the front of the chest, where they should meet and be fastened. The upper edge is then kept in position by tapes, before and behind, passing over the shoulders and tied at the top.

Charcoal Poultice.—Make a bread poultice as described and when the water has all been poured off, beat up evenly with the bread about half an ounce of finely powdered wood charcoal. Spread the poultice on linen, and, before its application, sprinkle the surface over with a layer of charcoal. The object of using a charcoal poultice is to act as a disinfectant, and remove offensive smells from a foul wound or ulcer, and thereby favour a healthier action.

Carrot Poultice.—A sufficient number of carrots for the required size of the poultice must be thoroughly washed, and all dirt and grit removed from them ; they must then be boiled till quite soft, mashed up into a pulp and spread on a rag or tow, in the usual way. The principal use of a carrot poultice is, as a stimulant, to clean the surface of wounds.

Mustard Poultices, or *plasters*, are used as a means of counter-irritation, and not for producing soothing effects, as linseed. They act as mild blisters, their action being due to the essential oil of mustard contained in the seed. They should, therefore, be applied with caution, especially to young children and old people. To prepare the poultice, a small quantity of the powdered seed is mixed with a little cold or tepid water, until about the same consistency as when used for the table; a few drops of vinegar are added, and the plaster then spread very thinly over a piece of linen or brown paper cut to the size required. The surface is then covered with a thin piece of muslin, or tissue paper, and applied to the skin. The mustard must never be applied directly to the skin. A mustard poultice is generally kept on for fifteen or twenty minutes; the skin is then to be carefully wiped with something soft, and a little flour sprinkled over, which will remove the burning sensation. In applying them to children, it is as well to turn down the corner of the poultice occasionally, and remove it as soon as the skin underneath shows a bright scarlet colour.

Fomentations, by means of flannel wrung out of boiling water, are applied to the skin principally to relieve pain in the underlying structures. To apply them, a wringer is put into a basin, and on it is laid a piece of flannel, about a yard square, folded into a small space.

Boiling water is then poured on it, and the flannel wrung out till dry. This is then folded the required size, laid on the affected part, and covered over with oiled silk, calico, or a piece of old blanket. If necessary, it can be bandaged on lightly in position, and must be changed every two hours, or oftener. To increase its soothing effects, a teaspoonful of laudanum (tinct. opii) can be

sprinkled on the flannel after the water has been wrung out. As the principal virtue of a fomentation is its heat, and they cool very quickly when exposed to the air, they should be made with quite boiling water, and carried in the wringer to the bedside, and there unfolded.

Wringers are made of coarse towelling, cut into widths of sixteen inches, and lengths of thirty-two inches. The sides must be firmly bound, and the ends have a hem wide enough to admit the wringer stick. These hems must be very firmly sewn, otherwise they are liable to give way when being used. The sticks should be about eighteen inches long, and four inches in circumference. To use the wringer, pass the sticks through the hems, and gather the wringer into the middle of the stick; then spread it out into an empty basin, leaving the sticks hanging over the edge; place the flannel for the fomentation in the basin on the wringer, pour on the boiling water, fold the wringer over the flannel, and, holding a stick in each hand, twist them in opposite directions, until every drop of water has been squeezed from the flannel.

Turpentine Stupes are used when a stimulating fomentation is required. The flannel is wrung out of boiling water, as usual; then, on the surface to be placed in contact with the skin, one or two teaspoonfuls of spirits of turpentine are carefully sprinkled, and should be well spread through the flannel, otherwise it is apt to raise blisters in spots.

Spongio-piline is a thick woollen material, much used for fomentations. One surface is coated over with some waterproof substance, and prevents the evaporation of whatever fluid the fomentation consists. To apply it, a piece of the spongio-piline is cut, of sufficient size to

cover the affected part, and placed on the wringer, with the coated surface downwards, boiling water is poured over, which is then wrung out, and the hot spongy surface applied next the skin.

Blisters are severe forms of counter-irritation, and cause an effusion of serum under the cuticle, raising it above the level of the surrounding skin. The fluid form (liq. epispasticus) is that which is generally used; the portion of the skin requiring the blister being merely painted over once with the blistering fluid, which dries on, and very soon completes its work.

In the solid (Emplast: Lyttæ) form, a blister is prepared by spreading a sufficient quantity of the ointment on a piece of soap plaster. The plaster is cut about a quarter of an inch larger in size than the spot to be blistered, and a little of the ointment is spread in the centre, leaving a margin of plaster all round, by which it adheres to the skin; it is left on for eight to ten hours, and then gently removed, and the blister dressed.

Dressing Blisters.—This is done by snipping the blister with a sharp-pointed pair of scissors, at the most dependent edge just where it unites with the unblistered skin, so as to allow every drop of fluid to escape; care must be taken not to allow the fluid to run over the unblistered skin, a small vessel, such as a glass testing-tube, being placed underneath to catch it as it runs away, and to preserve a portion of it for the medical attendant's examination.

If the whole skin of the blister has to be removed, it must be cut all round, and, after being taken off, a piece of lint spread, with whatever dressing may be ordered, must be laid over the blister, above which a piece of cotton wool should be placed, and then lightly bandaged.

The lint must be rather larger than the blister, but the dressing spread to the exact size.

The dressing should be prepared before the blister is touched, for the patient suffers considerable pain if the blister, from which the skin has been removed, is left exposed to the air. If blisters are to be kept open, they require dressing with *blue (mercurial) ointment*, or with a little *savin ointment*.

When applied to the head, the hair must, first of all, be closely shaved off, and the blistering fluid painted on, or a little croton oil well rubbed in. The latter raises a crop of pimples. Sometimes tartar emetic ointment is prescribed. A small quantity is rubbed in, night and morning, until a good crop of pustules are produced, which are then dressed, in the usual way, with some simple ointment.

When using blistering ointments in this manner, the hand must be gloved, and the palm of the glove covered over with a piece of oiled silk or gutta-percha tissue, to prevent the substance being absorbed by the operator. After each application the hands should be carefully washed.

Ointments are frequently ordered to be rubbed into the body, for special purposes, the skin being well adapted for absorption, which takes place by means of the pores leading down to the sweat glands ; which are much more numerous in some places than others, and these parts are generally selected for the application.

The usual places for rubbing in ointment, are, the armpits, inside the bend of the elbows, in the groins, and behind the knees. *Mercury (blue ointment)* is frequently applied in this way, and the system brought under its influence. The place selected for the operation

is bathed with hot water, and well dried ; then the nurse having the hand protected with a glove, smears a little of the ointment in the palm of the glove, and gently rubs it into the skin, giving the hand a rotary movement, until that portion of the ointment has been used up ; when a fresh quantity is applied in the same way.

The patient must wear a flannel night-shirt, next to the skin, to absorb the surplus amount of ointment, which would otherwise be rubbed off and wasted ; next day, the application is repeated, but at some other spot, and continued until the effects of mercury are produced in the system.

Application of Ointments is another form of dry dressing. A piece of lint is cut rather larger than the wound or ulcer, and the ointment to be applied having been worked up with a spatula, is spread smoothly and evenly over one-half of the dressing, commencing from the centre, by keeping the blade of the spatula flat on the surface, and always spreading in the same direction, namely—away from you. The lint is then turned round, and the ointment spread in the same way over the remaining half.

Leeches, and how to apply them.—If it is necessary to remove a small quantity of blood from any locality, the application of *leeches* is much more frequently resorted to than venesection.

Before their application, the part should be well washed with tepid water, dried, and smeared over with a little milk, or sugar and water ; dry the leeches well, by letting them crawl over a towel, then rinsing out a wine-glassful with a few drops of vinegar, put them in the glass, and évert it over the part where the application is required.

When applying a leech to any particular spot, such as close to the eye, put it in a test-tube, filled with water, and proceed as before. When used for the mouth or nostrils, pass a thread through their tails to prevent them from being swallowed; never drag the leeches off, as they might leave their little teeth in the wound, and produce great irritation.

When enough blood has been drawn, apply salt to their heads, and they will readily drop off; they should then be put in a soup plate, containing a mixture of salt and water; and, when they have relieved themselves of the blood they have swallowed, they should be put in a jar of cold clean water by themselves; the water for a few days must be changed every twenty-four hours, and then after that once a week,

When the leeches have been removed, the bleeding can be encouraged by putting on a hot linseed poultice. To stop the bleeding from leech-bites, dry the spot well with lint, and apply pressure with the tip of the finger, for a few minutes; if, on removing the finger, the blood still oozes out of the wound, dry it well again, and sprinkle over it some powdered alum, or paint over with solution of perchloride of iron (steel drops).

Another good plan is to pinch up the wound between the finger and thumb so as to expose fully to view the triangular-shaped bite, dry it well with lint, and then put on a drop of collodion, which immediately forms a coating of skin over it and stops all further hæmorrhage. Failing these applications, send for the medical attendant.

Pads for Splints.—In all cases splints should be carefully selected so as to fit a limb accurately, and must be well padded with tow or cotton-wool, before being applied. Splints which have already been in use must be well

washed before being repadded, those that have been used in infectious cases must also be repainted, if of iron, or scraped, if of wood.

Pads may be made of tow or sheep's wool, or of tow carefully teased out and put between layers of cotton wool, covered with soft cloth or muslin, quilted in large diamonds without carrying the thread from point to point. Care must be taken to prevent the stuffing of the pads becoming lumpy and uncomfortable. The pad should fit the splint and slightly overlap its edges. Ex-tempore pads may be made by packing some tow or cotton wool in a piece of lint or muslin, and fastening it to the splint with a strap of plaster at each end.

Perinæal Bands or Pads are usually made of padded leather, with buckles, but they can be made by the nurse in the following way: take a piece of tape five or six feet long, cover the middle of it with a piece of strong calico about twelve inches in length, and stuff it with tow or cotton wool, about two or three inches thick; sew the tape firmly at each end where it comes through the band, which is then covered with oiled silk to keep it clean. When in use, a piece of lint should be dusted over with fine powder and put between the oiled silk and the skin to prevent the latter from chafing.

Bandages and Bandaging.—The ordinary bandages in use consist of unbleached calico, torn into strips several yards in length, and varying in width from one to six inches, according to the size of the part to be bandaged. The chief forms of bandages are the roller and the triangular (Esmarch's). They are used to support the different parts of the body, to apply pressure, for fixing splints or dressings, and to allay muscular action. *The roller bandage* for the leg should be three inches wide

and eight yards long ; for the arm, two and a half inches by six yards ; for the chest, six inches by eight or ten yards long. To keep poultices or dressings to the scrotum, perineum, or buttocks, a T-bandage is used ; a band, corresponding with the cross-bar, goes round the waist and to the middle of it ; at the back is fastened a handkerchief or bandage, which passes between the thighs, and is tied by the other end to the band in front. The roller bandage is applied in two ways, to the joints, by means of a *figure of 8* turn, but to the other parts of a limb by the *reverse spiral*. The following directions must be attended to : the nurse should stand in front of the patient and hold the roller in the opposite hand to the side she is bandaging—the outer surface of the bandage must be next to the skin ; commence on the inner side of the limb, and carry the bandage by the front to the outer side ; begin from below and work upwards, and avoid wrinkles. To make the *figure of 8*, commence by taking the bandage twice straight round the limb below the joint, then once round above the joint and down again below it, and so on alternately upwards and downwards several times, finishing it off above. To make the *reverse spiral* : after taking the roller twice round the limb to fasten the end, slant it upwards, pull it tightly, and fasten it by placing the thumb of the unoccupied hand on about the middle of the bandage ; then slacken the portion of the roller in the other hand, and sharply turn the upper border downwards over the thumb, making the reverse, carry the bandage behind the limb and bring it again in front, so as to overlap about half the width of the previous turn, and again reverse, as in the first case. The reverses should be made on the fleshy part of the limb, and be carried in the same line one above the other.

The Triangular Bandage is a piece of cloth, triangular in shape, measuring four feet at the base, and two feet ten inches each at the sides. It can be applied in a great number of ways, which require practical demonstration to learn. The point of the bandage is that end which faces the middle of the base, the centre line of the bandage being the one drawn from the point to the centre of the base, to which it is at right angles. To fold the bandage for fastening splints or dressings, bring the point to the middle of the base, then the upper border to the base, and double again if required very narrow.

The four tail bandage, to support the chin, in cases of fracture of the lower jaw, get a strip of roller bandage, about one yard long and three inches broad, and tear each end in half to about two inches from the centre, so as to make four tails. Next make a slit about two inches long in the centre portion, but nearer one border than the other, so as to divide it into a narrow and broader strip, the chin is put into the slit, the narrow strip comes in front of the chin, the broader portion underneath the jaw ; tie the two ends at the back of the neck and the other two ends to the top of the head, then tie all four ends together.

The Many-tailed Bandage.—Take a piece of an ordinary bandage, the length of the limb to be bandaged, and lay across it strips of another roller, long enough to go once and a half round the limb, and tack them firmly to it, each strap overlapping the rest by one-third.

The bandage is then placed under the limb, and the tails are then separately folded round, commencing from below, and crossing one another in front.

The Spica Bandage is the ordinary figure of 8 bandage applied to the hip joint. Commence by doing a few

turns of the reverse spiral round the thigh, then take the roller round the body, bringing it in front of the groin, and round the back of the thigh to the front of the leg, and then again round the body.

Starch Bandages.—A solution of starch is made in the ordinary way with warm water placed in a basin, and two or three roller bandages are unrolled and then done up again after passing them through the liquid. The limb is next wrapped up in cotton wool, and a dry bandage neatly applied, and the starch painted well over it and made to soak into its interstices; strips of pasteboard, torn to a suitable shape and size, and well soaked in the starch, are then laid along the limb, where the support is mostly required, and the whole is carefully covered with the starched bandages previously prepared. The apparatus will take several hours drying, during which time the limb must be maintained in position by sand-bags. When the starch case is dry it should be cut up its whole length with a pair of strong pliers, to prevent it from dangerously compressing the limb, and the edges brought together by means of a plain dry bandage.

Chalk-and-gum Bandage is applied the same way as the starch bandage: the adhesive mixture is made by adding boiling water to equal parts of gum arabic, and precipitated chalk; it has the advantage of setting sooner than the starch bandage.

Plaster of Paris Bandage is made by mixing in a basin some finely powdered plaster of Paris with cold water, until it becomes of the consistence of cream. The bandages used are then placed in another basin of water, so that they may become thoroughly wetted as they unroll before being rolled up in the basin containing the plaster mixture.

The limb is now wrapped in cotton wool, a moist bandage applied, rubbed all over with some of the plaster mixture, and then covered with the two or three plaster bandages previously prepared. The assistant holds the limb steadily in position for about five minutes after the application is completed, when the plaster will be sufficiently set, and will only require time to dry.

To remove the bandage, or to cut out valvular openings opposite any wounds, the spot must be rubbed for a few minutes with the dilute hydrochloric acid, which will soften it sufficiently to cut with scissors.

Nursing of Sick Children.—The treatment and nursing of the diseases of early childhood form a very special study, on account of the many difficulties which are encountered at the very outset; foremost amongst them being, the inability of the little patient to express its wants or feelings, in words. No woman should undertake the care of sick children, until she has had considerable experience in managing them in health; and no person who is not actually fond of children, or who has not been educated in the signs and language of infants, will ever make a good nurse. It is not sufficient, for example, when a child cries to recognise that it is merely hungry or in pain, but in the latter case, the nurse should detect, from the character of the crying, in what part of the body the pain is located.

Symptoms of Disease.—The only language in which an infant can express its distress, are cries and tears. If the pain is in the stomach, the cries will be loud and passionate, accompanied with a great flow of tears and drawing up of the legs towards the abdomen: when the pain passes off, they are stretched out again, and, after a few convulsive sobs, quiet sleep follows.

If the child is suffering from inflammation of the lungs, it will give a short, sharp cry after a deeper breath than usual, or slight cough, and then apparently stifle the cry or cough, because the effort makes the breathing painful : the cry, moreover, is not accompanied with tears. Then again, in diseases of the ear or brain, the child, whilst lying apparently quietly asleep, will be seen to flush suddenly on one side of its otherwise pale face, and then give a few sharp piercing shrieks, which subside into a low moan or wail, as the sufferer gradually dozes off, until pain wakes it up again.

In dealing with sick children, a nurse must exercise great tact, more especially in administering medicines. She must have a kind, quiet manner, gentle voice, and endeavour to gain the child's confidence or love. The little one, if once frightened by a rough manner or voice, will never get over the dislike or fear of the nurse.

Practical points to be observed in nursing Children.—

If the child is thirsty, and calls for water, it should not be refused, but given in moderate quantities, as cold water, in small spoonfuls, does much less harm than a severe fit of crying, which would probably follow its refusal. Then, again, never give it a tumblerful of water, and only allow it to have a few sips, but put a few spoonfuls in a cup or glass, and let the child finish it.

When applying a hot poultice to the tender skin, be very careful always to place a piece of flannel between the skin and the poultice, and, when the child has got accustomed to the first shock of heat, slip it away; otherwise, a child once burned by suddenly applying a hot poultice to the back or chest, will make every effort to resist a second application. So, also, in giving a child a

hot-bath ; let the bath, with the hot water in it, be placed in front of the fire, cover it with a blanket, lower the little one on to the blanket, and with it into the water ; by this means the first shock of the hot water is greatly lessened, and the child will not be frightened by the steam rising from the bath. When it has been sufficiently long in the bath, it must be lifted out of the water, wrapped in a dry, hot blanket, and put to bed.

In warm weather, children should be taken out in the fresh air daily; the tender eyes and skin should be protected from wind and sun by covering the face with a soft pocket handkerchief; and in cold weather the child must be properly and sufficiently clothed. Fresh air and sunlight are as essential to a child's growth as food and water.

Great regularity should be observed in placing a child to bed at stated times. Never rock a child, or walk about with it, till it sleeps ; lay it in its cradle awake : if nature requires it, sleep will come, and the child will very soon get into the habit of falling off to sleep when its bedtime arrives. An infant of a month old ought to sleep twenty out of twenty-four hours.

Lastly, never force a child to walk too soon ; it is a question of the strength of the child to do so or not, and it will endeavour to stand of its own accord when it feels sufficiently strong enough. Bending of the bones, and enlargement of the joints, are the most frequent results of forcing a child to stand before the young bones are of sufficient strength to support the weight of the body.

Feeding of Infants.—For the first six weeks, the breast should be given every two hours during the day, and less often at night, the breast-milk being allowed to accumulate for the day. If cow's milk is given, it should

be diluted with twice its amount of water and a small quantity of loaf sugar, or, better still, sugar of milk, should be added, and the food after being mixed in a large cup, given to the babe with a dessertspoon: a much better plan than with a feeding-bottle, which is very difficult to keep clean. The lip of the spoon must be held against the roof of the mouth, when the child will put its tongue underneath it, and suck down the contents: all artificial food should be given to the child warm, and this can easily be done by placing the bottle or cup for a few minutes in boiling water.

Never give a child an empty feeding-bottle to suck, to keep it quiet, without first of all knotting the elastic tubing to prevent it drawing air into the stomach. Except under special circumstances, an infant should not be kept at the breast after nine months old, whilst, on the other hand, it should not be weaned by too suddenly depriving it of the breast, and giving it nothing but farinaceous food. Until a child is over four months old, nothing but milk should be given.

The salivary glands, whose secretion is chiefly concerned in converting the starchy products of food into soluble dextrin and grape-sugar, do not become functionally active until the fourth or sixth month; hence such articles of diet as sago, arrowroot, cornflour, gruel, if given at the early period of an infant's life, are not dissolved, but pass undigested into the intestines, and give rise to troublesome vomiting or infantile diarrhoea, the only nourishment the child gets out of it being derived from the portion of milk with which these farinaceous foods are prepared. Not till the child has reached the seventh month should bread and milk, or biscuits for nursing purposes, be given, and these must

be increased by degrees until the child is gradually weaned.

About the tenth month one meal of broth, beef-tea, or yolk of egg, should be given daily; and after the twelfth month the diet must be increased, by giving finely-minced meat or mashed potatoes with gravy.

Thrush is a very common ailment of infant life, and is almost invariably due to error of diet; the early administration of farinaceous food being the most frequent cause. It consists of small white specks scattered over the tongue and mucous membrane of the mouth, which, after a while, separate, and can be rubbed off, leaving a reddish unbroken surface, or a small ulceration, causing great difficulty and pain in swallowing or sucking. If this continues, the same results are produced along the lining membrane of the whole alimentary canal, giving rise to vomiting and obstinate diarrhoea.

Care must be taken to alter the diet. Milk must be given, and this in small quantities, and mixed with lime-water to check the vomiting.

When vomiting occurs, the child must be taken from the breast, and nothing given to it for two or three hours, and then only a teaspoonful of perfectly cold water. If this is not rejected, it may be followed in ten minutes or so by a second and third; then, after a lapse of an hour or two, a small quantity of cold milk and lime-water, or a little beef-tea, can be administered. The child must be kept lying down, and after twelve or eighteen hours may be restored to the breast, but only allowed to suck very small quantities at the time.

If the vomiting is more persistent, nothing but a few small pieces of ice, or a small quantity of iced milk and lime-water, must be given for at least twenty-four hours.

Teething.—About the seventh month the child will be troubled with the appearance of the first incisor teeth, which process is generally accompanied with a certain amount of fever and irritation. A little butter, gently rubbed with the finger along the gums, will give great relief; but avoid giving the child any hard substance to chew, as it is likely to break the enamel off the point of the teeth.

If the gums are painful, red, and swollen, they may have to be lanced, which, if judiciously performed, often saves the child nights and days of suffering, and wards off the likelihood of convulsions.

Management of Convalescents (CHILDREN AND ADULTS).—After a patient throws off the disease he may have been suffering from, and passes into the state of convalescence, the greatest care has to be taken to guard against a relapse or return of the bad symptoms; the principal points to attend to, are the patient's feeding and clothing, exposure to cold air, and over-exertion. Frequently, the patient has a ravenous appetite, which is difficult to control. Food must be given regularly, but in smaller quantities than in usual good health, care being taken not to overload the stomach, the food itself being nutritious and easily digested. After typhoid fever, special precautions have to be taken on account of the ulceration of the bowels, which is invariably present, only liquid food being administered for some time. During the first few days of convalescence the patient's appetite generally is very good, and then after a while it falls again; no alarm need to be taken at this, as it will gradually return again. The patient must be warmly clothed, especially after such affections as acute rheumatism and scarlet fever. Flannel drawers and vests

must be worn next to the skin ; and, after diseases of the bowels or kidneys, a broad flannel bandage, five or six yards long, should be wrapped round and round the loins. Prevent the patient from being exposed to draughts of cold air, more especially in those cases where the skin has undergone desquamation. Exercise is essential, especially out of doors, but it must be judiciously taken, commencing at first with merely walking about the room, then going up and down stairs ; and, lastly, going out of doors, beginning with carriage exercise, and, as the patient gets stronger, allowing him to walk or ride.

The patients must, on no account, be allowed to over-exert themselves, as great prostration is often thus produced. After scarlet fever, a patient should never be allowed to go out of doors as long as any particle of skin it still desquamating. A tepid bath should be taken every morning, gradually as the patient becomes stronger and better, reducing the temperature to a cold bath, and adding a little sea-salt to make it more stimulating. The functions of the bowels and kidneys must also be attended to. The patient requires a large amount of sleep, which must be encouraged. If the patient rises about 11 a.m., he should lie down and sleep for a couple of hours in the afternoon, and must retire to bed at an early hour in the evening ; during the first few days of the convalescence, the patient must not be allowed to sit up for more than an hour at the time, or even less ; and rather than undergoing the fatigue of dressing, should have a blanket or dressing-gown thrown over him. When well enough to venture out of doors, a change of air to inland or sea-side is very beneficial.

Personal and Family Hygiene.—See that the bed-room is thoroughly ventilated, and that the top sash

of the window is kept open, for a short extent, all night except during cold and foggy weather. The door and windows being kept tightly closed, together with the effects of a candle or gas-jet burning in the room, are the causes of restlessness, or heavy unrefreshing sleep, a sense of heaviness on awakening, and more or less headache. The bedrooms should be painted, not papered; and every person in the house must have a separate bed. The drains should be in proper working order, and the drinking water must always be filtered. The wearing apparel should not be folded up at night, but hung up on pegs, so as to allow them to be thoroughly ventilated. In the morning, before leaving the room, open the windows, top and bottom, and throw the bedding back to the bottom of the bed, and double over the mattress, so as to expose everything to the air. The body should be bathed over every day in cold or tepid water, to ensure, by cleanliness and friction, a proper action of the skin. The teeth ought to be cleaned after every meal, by means of a hard brush and plain cold water; they should at least be washed every night and morning. Use a hard brush, as it braces up the gums and gives them a healthy bright-red colour. They may bleed a little at first, but will soon get hardened. Attention should be paid that the natural functions of the body are regularly performed; any tendency to constipation being easily controlled by taking a small quantity of some natural mineral aperient water, or even a tumblerful of cold water night and morning.

Outdoor exercise, either riding, driving, or walking, must be taken every day; and from seven to eight hours' sleep is the very most an adult requires. Women should avoid wearing garters, as they are the principal cause of varicose veins of the legs. Stocking suspenders, attached

to the waist by a band, are very much preferable. Avoid tight-lacing, which hinders respiration, and deforms the internal organs of the body; and high-heeled or pointed boots, which compress the toes, throw forwards and distort the instep, cause thickening of the muscles of the front of the leg, and wasting (atrophy) of the muscles of the calf. Clean under linen should be well aired and thoroughly dried; after being exposed to rain, the clothing, especially boots and stockings or socks, should be removed as soon as possible and the skin rubbed dry with warm towels.

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